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Journal of Developmental Reading

A Quarterly for the Improvement of Reading

College Reading Difficulties — Alton V. Raygor, Forrest L. Vance, and Donna Adcock

Deficiencies of Able Pupils — Iver L. Moe and Frank Nania

TV and Grades — Arthur S. McDonald

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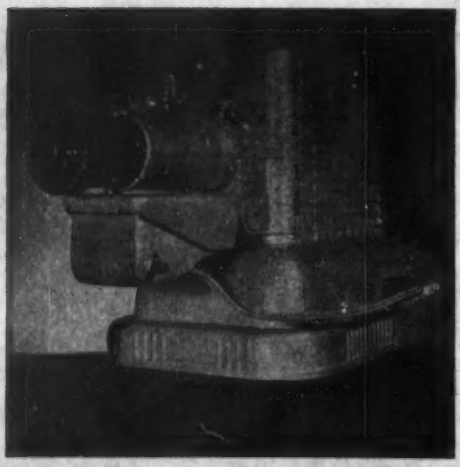

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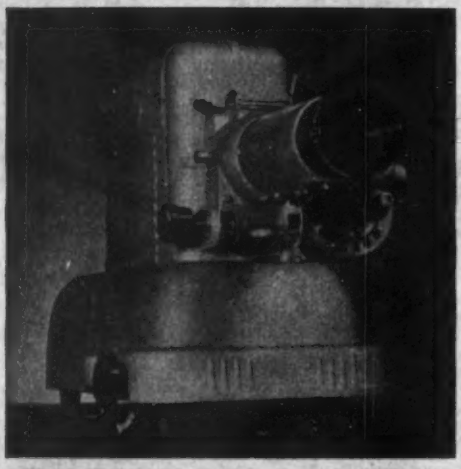

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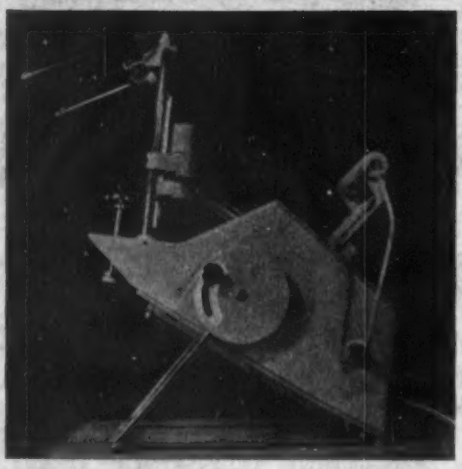

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The Diagnosis and Treatment of College Reading Difficulties Using Patterns of Symptomatic Statements

ALTON V. RAYGOR, FORREST L. VANCE
and DONNA ADCOCK

STUDIES OF READING SKILLS in relation to personality variables generally have focused on correlations between reading tests and personality tests. These investigations have not proved to be very useful in the day-to-day diagnostic problems faced in the clinical situation. It is generally conceded, however, that emotional and attitudinal factors must be taken into account in the treatment of reading difficulties.

At present, subjective appraisals of emotional and attitudinal factors are taken into account in accordance with the biases of the particular clinician involved. No diagnostic schema for reading disabilities has yet been constructed in which personality variables form an integral part of the syndromes defined in the classification system. The ultimate purpose of this research program is to develop a systematic schema for the diagnosis and treatment of college reading difficulties which includes relevant emotional and attitudinal variables.

The present study is the result of a search for a method of developing symptomatic syndromes independent of preconceived notions as to what the basic kinds of reading disability might be. To avoid such preconceptions, students' own self-descriptions have been used as the basic data, uncontaminated by the touch of a psychologist.

To obtain these data, a form was given to all the students who appeared in the Educational Skills Clinic of the University of Minnesota during one academic quarter. On this form, we requested them to make twenty statements descriptive of their reading, being as specific as possible. We had sixty-seven students in the initial pool, and, from those sixty-seven stu-

Alton L. Raygor, Forrest L. Vance, and Donna Adcock are members of the Student Counselling Bureau, Office of the Dean of Students, University of Minnesota.

dents, we collected 781 statements. These statements were then reduced to 285 by removing duplications and eliminating statements which were completely irrelevant.

The resulting 285 items were printed as a "True-False" questionnaire, which we have called the Diagnostic Reading Inventory (DRI). The content of this instrument is extremely heterogeneous, including statements referring to present level of various reading skills, feelings about reading ability, need for improvement, study habits, general physical conditions, vision, motivation, interest in reading, and reading likes and dislikes. For example, students marked as True or False such statements as "Words I don't know I don't like;" "I comprehend slowly when reading swiftly;" "My reading must be improved;" "I never finish what I plan to do;" "I cannot predict test questions;" "I do more reading than I used to;" etc. This pool of items was the focus of the two major aims of this study. These purposes were:

I. Examination of self-report as an aid to diagnosis in reading problems

   Relationship between students' self-reports and objective measurements of reading ability have been investigated, and the diagnostic value of emotional and attitudinal factors in the students' self-descriptions has been explored,

II. Development of symptomatic reading disability syndromes based on students' self-reports

   Students' self-reports, as indicated by "True" or "False" responses to the item pool described above, have been analyzed by means of an iterative inverse cluster analysis, (Bass 1957) a method of clustering persons whose responses are similar to each other but unlike those of the other people in the sample. It is presumed that those individuals who make similar responses to the items in the questionnaire form a group representing a diagnostic syndrome, the nature of which is to be determined by other techniques.

Emotional Versus Ability Content

The items of the DRI were classified by three judges into the following categories: (a) Items in which the content is

essentially a statement of reading ability; (b) Items in which the content is essentially a statement of feelings or attitudes about reading; (c) Items not classifiable into the above two categories.

All three judges agreed on the classification of 183 of the 285 items of the DRI. Of the 183 items on which there was perfect agreement, ninety-eight were placed in the *'ability'* category; seventy-six in the *'emotional'* category; and nine were considered unclassifiable. Keys were then constructed for the seventy-six 'emotional' items (the E-Key) and for the ninety-eight 'ability' items (the A-Key). A subject was given one point on these scales for each item answered in the direction that the judges agreed would characterize a good reader.

The DRI and the Diagnostic Reading Test, Survey Section, (Form A), had been administered to all students coming to the University of Minnesota Educational Skills Clinic for help with reading and study skills, during the winter quarter 1957-58, (N=68). Both instruments were administered before any reading help had been given.

A rate of comprehension score was calculated for each student by combining the Rate score and the Story Comprehension score on the Diagnostic Reading Test. This was done by multiplying the reading rate by the proportion of correct items on the comprehension test. This rate of comprehension score was then correlated with the E-Key and A-Key of the DRI. The correlation between rate of comprehension and the E-Key was .36, and that between rate of comprehension and the A-Key was .33. Both of these product-moment r's are significant at the .01 level.

It should be noted that the E and A Keys were constructed without using measures of actual reading ability in any way. After the initial correlations with the Diagnostic Reading Test had been computed, a traditional item analysis was performed to select E and A items discriminating at the .05 level between the upper and lower halves of the experimental group with respect to rate of comprehension scores on the Diagnostic Reading Test. By using only these items, the correlation between rate of comprehension and the E-Key increased to .45, and that between rate of comprehension and the A-Key climbed to .52.

From these data it is clear that both self-reports of ability and self-reports of feelings and emotions, as contained in the DRI, contain information related to reading ability. A correlation between the initial E and A Keys of .71 indicates considerable interdependence between the two variables, but further investigation is needed before raising the question of combining the two keys. It must also be remembered that the DRI was not primarily intended to compete with the existing methods of assessing ability. Its ability to predict reading ability does, however, throw some light on a promising and relatively unexploited approach to assessing emotional factors in reading disability.

Statements Regarding Reading Made by Clinic Versus Non-Clinic Students

Content of Statements

The original twenty-statement questionnaire was administered to two groups of students: (a) a group of sixty-seven students, forty men and twenty-seven women, who applied to the University of Minnesota Educational Skills Clinic for help with reading and study problems during the fall quarter of the academic year of 1957-58; (b) a group of twenty-seven students, seven men and twenty women, given reading tests in the Student Counseling Bureau during the same quarter as part of their orientation to the College of Education.

A total of 781 discrete statements was made by the clinic group. These statements were sorted into content categories by a research assistant. This classification was reproduced by three judges with complete agreement on eighty per cent of a sample of 100 items. Each item was then classified in terms of its positive, negative, or neutral attitude toward reading. For example: "I dislike reading aloud" would be classified as negative; "Reading has always been a pleasure for me" would be classified as positive; and "I seldom read lying down" would be considered neutral. Table 1 shows the content distribution of statements made by both the clinic and non-clinic samples.

An overall chi square was run to test the commonality of the distribution of responses among all eighteen categories for

the clinic and non-clinic groups. This chi square totaled 273.2. (The .001 level of significance is reached at a chi square of about forty for seventeen degrees of freedom.) Separate tests for differences in each content category are not appropriate because of the interdependence among frequencies in the various categories. However, it should be stated that, if the independence assumption were tenable, percentage differences as small as that in the "Memory" category would be significant at the .01 level.

These data indicate that there are marked differences in the content of self-evaluative statements made about reading by clinic students as opposed to some non-clinic students. The

TABLE 1

Distribution of Responses to Reading Questionnaire by Clinic and Non-Clinic Groups

Category	Sub-Group Frequency Clinic	Non-Clinic	Sub-Group Percentage Clinic	Non-Clinic
Rate-time	102	23	13.06	6.68
Concentration	98	19	12.55	5.52
Comprehension	81	18	10.37	5.24
Re-reading	29	12	3.71	3.49
Memory	36	4	4.61	1.16
Vocabulary	44	12	5.63	3.49
Skimming	34	7	4.35	2.03
Important Points	25	4	3.20	1.16
Spelling, pronunciation, etc.	26	2	3.33	0.58
Reading aloud	12	7	1.54	2.03
Nervousness	13	6	1.66	1.74
Aspiration	22	10	2.82	2.91
Study habits	42	6	5.38	1.74
Vision-perception	16	14	2.67	4.07
General physical	21	3	2.69	0.87
Evaluation	86	53	11.01	15.41
Motivation	66	9	8.45	2.62
Likes and dislikes	28	135	3.59	39.24

TABLE 2

Relationship Between Feeling Tone of Statements and Reading Disability for all Content Categories

	Feeling Tone		
Group	Negative	Positive or Neutral	Totals
Non-Clinic	150	194	344
Clinic	638	143	781
Totals	788	337	1125

fact that such gross differentiations can be made offers some support for the belief that the items generated by the free response technique will provide a meaningful basis for an extended classification of reading disabilities.

Feeling Tone of Statements

As mentioned above, each statement was classified by three judges as reflecting a positive, negative, or neutral feeling regarding reading. An analysis of the relationship between feeling tone and reading disability was then undertaken by plotting the proportion of negative versus non-negative statements in each content category against the clinic versus non-clinic classification of subjects. The general scheme is indicated in Table 2, which presents the results for all categories combined.

A summary of the data for each category is given in Table 3.

TABLE 3

Relationship Between Content and Feeling Tone of Statements

	Clinic Frequency		Non-Clinic Frequency		
Category	Positive or Neutral	Negative	Positive or Neutral	Negative	P
Rate-time	19	83	6	17	
Concentration	7	91	2	17	
Comprehension	18	63	7	11	
Re-reading	2	27	0	12	
Memory	1	35	1	3	
Vocabulary	5	39	7	5	<.01
Skimming	5	29	7	0	<.01
Important points	0	25	4	0	<.01
Spelling, prounciation, etc.	2	24	0	2	
Reading aloud	0	12	7	0	<.01
Nervousness	0	13	0	6	
Aspiration	3	19	0	10	
Study habits	6	36	2	4	
Vision-perception	1	15	3	11	
General physical	2	19	1	2	
Evaluation	16	70	29	24	
Motivation	13	53	0	9	
Likes and dislikes	20	8	110	25	
Totals	143	638	194	150	<.001

COLLEGE READING DIFFICULTIES

Putting the data from Tables 1 and 3 together, we have some concrete evidence for the belief that college students with reading disabilities differ from other students both in what they say about reading and how they feel about reading. Also, it again looks as though the analysis of symptomatic statements provides a powerful tool for testing hypotheses in this domain. Less rigorously, we have found that these data provide a baseline and context for the interpretation of students' responses during interview.

For example, knowing that concern about study habits is not clearly related to college reading disability, one tends to discount it to some extent in a diagnostic interview, as opposed to expressed attitudes regarding reading aloud, vocabulary, skimming and identification of important points. Or, to cite other examples, a spontaneous expression concerning liking or disliking certain materials is much more likely to come from a non-disabled student, while the opposite is true for statements about pronunciation, concentration, or motivation. Such clinical impressions of utility are often very stimulating but it is of course, foolhardy to become so intoxicated with this shadow of validity that one fails to test each suggestion rigorously.

A Cluster Analysis of Clinic Students Based on Their Responses to the DRI

Students who came to the University of Minnesota's Educational Skills Clinic during the winter quarter of the 1957-58 school year were the subjects of this analysis. There were seventy students in all, thirty-seven men and thirty-three women. All of these students completed the DRI, and the resulting data were subjected to an inverse cluster analysis, using the iterative method devised by Bass (1957). It should be noted that this procedure involves some subjective judgment in the establishment of criterion values for the correlations which define the limits of each group isolated. Interested persons are referred to the original Bass article for details.

In the present study, the total was divided by this technique into five fairly well-defined sub-groups. All available personal and test information was then collected for each subject, and

an attempt was made to explore the nature of the cluster. Inspection techniques reveal some substantial intercluster differences on indices of ability, reading problems, personality, and/or demographic variables such as age, sex, and class standing.

Our comparisons thus far have been largely based on incomplete data, since dropouts, failure to take tests, etc., have produced a great deal of unsystematic variability in our N's across various data. For this reason, and because it is hoped that the difference between persons in the various clusters will prove to have their greatest utility in relation to prognosis, no attempt will no be made to characterize the sub-groups.

Summary

This is the initial study of a research program designed to develop a diagnostic schema for the classification and treatment of college, reading difficulties using symptomatic self-descriptions, hoping to include thereby relevant emotional and attitudinal variables.

Student self-descriptive statements have been collected and made into an inventory. The content of the students' self-reports has been analyzed, and the responses of reading clinic cases have been compared with the responses of non-reading clinic cases, showing differences in content as well as differences in emotional tone. Statements with emotional or attitudinal content have been shown to predict measured reading ability, as well as statements in which the content is essentially a statement of ability level. The two kinds of statements have also been shown to be highly related to each other. Item analysis has provided a set of self-descriptive statements which predict measured reading ability about as well as mental ability tests.

An inverse cluster analysis has identified groups of people whose self-descriptions are similar to each other, and an analysis of test information on the subjects involved is under way in an attempt to understand the nature of the symptomatic syndromes identified by the cluster analysis.

References

[1] B. M. Bass, "Iterative Inverse Factor Analysis—a Rapid Method for Clustering Persons," *Psychometrika*, 1957, XXII, 105-107.

[2] Helen M. Walker and Joseph Lev, *Statistical Inference*, New York: Henry Holt & Co., 1953.

Reading Deficiencies Among Able Pupils

IVER L. MOE and FRANK NANIA

PUPILS WHOSE STANDARD READING SCORES place them well above national norms and whose academic records are exemplary can be, and often are, retarded in reading. "Retardation," as used in this article, describes a situation in which the pupil's development in reading is significantly below a readily accessible potential. In this study, twelve high-achieving junior high school pupils were selected to receive special help in an effort to further develop reading skills. Weaknesses found among these students were concealed from perfunctory view by a smokescreen of exceeded norms and excellent report-card marks. However, an analysis of their performances on standardized and informal tests revealed correctable deficiencies. Two deficiencies, common to all students, were identified: (1) deficiency in study approaches to chapter-length materials, and (2) inflexibility in reading rate. The general inadequacy in their approach to chapter-length materials was established by interviews with the students, and inflexibility of reading rate was identified when the students were given an informal test especially devised for this study. Accordingly, this article will focus upon selection of students, analysis of reading development, the corrective program, and the results observed. Technical clinical procedures, complicated statistics, mechanical reading aids, and formal research design were not used. Therefore, the procedures of this study including the devising of a Rate Flexibility Test, can be duplicated in any junior high school where teachers recognize that all pupils—including high achievers—need a continuous, carefully planned, skills program to accompany efforts to provide enrichment of reading experience. This article is intentionally limited to skill development.

Iver L. Moe is Director of the Reading Service, and Frank Nania is eighth grade supervisor of the Campus School, at State University of New York, Teachers' College, Cortland, New York.

Growth "in" reading (skill development) is coessential with growth "through" reading.

Selection of Pupils

Four criteria were used for selection of pupils: (1) excellent report-card marks, (2) high scores on two different standardized reading tests, (3) an intelligence quotient of 110 or better, and (4) parental and pupil consent. A testing program was administered after which twelve pupils were selected, six boys and six girls. Equal distribution of boys and girls was coincidental.

First, the *Gates Reading Survey,*[1] Form I, was administered. This test purports to measure speed and accuracy, reading vocabulary, and level of comprehension. The complete *Iowa Every-Pupil Tests of Basic Skills,*[2] Form O, was also administered. Only subsection "A" and "B" were used for selecting pupils. These subsections purport to measure reading comprehension, vocabulary, map reading, use of references, use of index, use of dictionary, alphabetizing skill, and ability to read graphs. Form G of the *Kuhlmann-Anderson Test*[3] was used to obtain psychological data.

After the standardized testing program was completed, high scorers were tentatively selected. At a group meeting, the students were informed that data accumulated were generally favorable. It was pointed out that an analysis of standard scores, administration of informal tests, and interviews, would be used to identify deficiencies, if any. The students were then invited to participate in the experiment. All concurred. The next step, therefore, was designed to identify possible deficiencies through the use of procedures described earlier in this paragraph. When the analysis was complete, weaknesses identified, and a tentative corrective program planned, the parents were invited to attend a group meeting at which time a report was given describing the findings to date and the plan of work. All students were represented by at least one parent, all of whom indicated their support. Final selection of twelve eighth-grade pupils from the Campus School at the State University of New York, Teachers College, Cortland, New York, was then made. It was decided that twenty-four forty-minute sessions over a six-week period would be arranged.

Presentation of Standard Test Data

Following are the data from the tests, in turn, with an analysis for each:

Data from Gates Reading Survey and Kuhlmann-Anderson Test. The Gates test was administered during the first month of the eighth-grade term. Accordingly, the norm for the test was 8-1 (eighth-grade, first-month). For convenience, the results of the Gates and Kuhlmann-Anderson tests are shown in Figure 1.

FIGURE 1

Scores on Part II of the Gates Reading Survey and the Kuhlmann-Anderson Intelligence Test

	Gates Reading Survey[1]				Kuhlmann-Anderson[2]		
Case Number	Speed	Vocabulary	Comprehenson	Average	C.A.	M.A.	I.Q.
1	11-8	12-6	12-0	12-1	13-5	17-0	127
2	12-1	11-7	10-6	11-5	13-5	14-1	117
3	11-9	11-2	10-3	11-1	13-0	15-0	115
4	11-3	11-5	11-1	11-3	12-10	16-5	128
5	11-3	11-3	8-8	9-1	13-3	14-7	110
6	10-6	10-0	10-6	10-4	13-6	15-4	114
7	7-1	10-6	11-1	9-6	12-2	14-2	116
8	7-8	10-4	8-2	8-8	13-6	14-11	111
9	7-8	10-3	10-3	9-5	13-7	17-3	127
10	11-0	10-8	9-5	10-4	13-5	15-0	112
11	11-3	10-8	10-6	10-9	13-5	15-6	116
12	10-6	9-6	11-1	10-4	13-0	14-7	112

1. Gates Reading Survey data are expressed in grade equivalents.
2. Chronological age (C.A.) and mental age (M.A.) are expressed in years and months.

It can be noted in Figure 1, that the high grade-equivalent score in speed was 12-1 (Case No. 2) and the low score was 7-1 (Case No. 7). The median score was 11-1, thirty months above the norm. Case Nos. 7, 8, and 9 were the only students below the norm in speed of reading. It becomes apparent, superfically, that the standard scores in speed were favorable. However, after closer analysis to be described later, evidence will be presented to indicate that the selected pupils read materials at an inflexible, habituated, rate irrespective of purpose for reading or the relative difficulty of materials being read.

In the vocabulary subsection of the Gates test, all pupils were above the norm. The high score was 12-6 (Case No. 1)

and the low score 9-6 (Case No. 12). The median was 10-8, twenty-seven months above the norm. Favorable scores also accumulated from the comprehension subsection of the test, the high score being 12-0 (Case No. 1) and the low score 8-2 (Case No. 8). The median score in comprehension was 10-6, twenty-five months above the norm. In average reading, the high pupil (Case No. 1) was thirty-nine months above the norm and the low pupil (Case No. 8) was one month above. The median score in average reading was 10-4, twenty-three months above the norm.

The Kuhlmann-Anderson Test results, in Figure 1, show that intelligence quotients were 110 or better. The high quotient (Case No. 4) was 128 and the low score (Case No. 5) was 110. The median intelligence quotient was 116.

Analysis of Data: Gates Reading Survey

The form of the Gates test used in the experiment is advocated for upper third grade through grade ten. The first subsection purports to be a test of reading speed and accuracy. The experimental pupils scored high as previously indicated. Since the writers believe that standard scores can be misleading unless carefully examined in an effort to determine what the test measures, the structure of the speed subtest was studied. The speed subsection is comprised of thirty-six short, simple paragraphs written at about third-grade level. The paragraphs presented no conceptual or ideational challenge to the experimental students. However, if the speed subsection was given to third-grade pupils, the concept load represented in the thirty-six paragraphs may well represent a different problem. Third-grade children may score low on such a subsection for a variety of reasons. Some younger children may score low because of poor word-recognition skill, or poor comprehension, or low reading rate. However, the speed and accuracy subsection presented only one problem to the selected eighth-grade pupils—speed of reading. The time limit of four minutes was the only obstacle to their reading the thirty-six paragraphs containing approximately 1000 words. It was estimated that if the experimental pupils had read third-grade material at 350 words per minute, ample time would have

been provided for reading and answering questions and all would have reached the ceiling for that subsection. However, as shown in Figure 2, no student was able to finish the test. The "number attempted" column in Figure 2 shows the number of paragraphs attempted. The highest number of paragraphs attempted was thirty-four (Case No. 2) and the fewest number of paragraphs read was seventeen (Case No. 7). A further study of Figure 2 indicates that only one student failed to score perfect comprehension on paragraphs read. Case No. 5 attempted twenty-seven paragraphs and scored correct responses in twenty-six paragraphs.

FIGURE 2

Scores on the Speed and Accuracy Subtest of the Gates Reading Survey

Case Number	Number Attempted	Raw Score (Number Right)	Percent Accurate
1	31	31	100
2	34	34	100
3	32	32	100
4	26	26	100
5	27	26	96
6	24	24	100
7	17	17	100
8	19	19	100
9	19	19	100
10	25	25	100
11	26	26	100
12	24	24	100

This analysis led to the conclusion that while these students were characteristically above norms (median score 11-1) the speed subsection did not measure practical speed and accuracy well enough to justify generalizing. Some questions remained. Is it reasonable to expect able eighth-grade pupils to read third-grade materials at the rate of 350 words per minute and answer simple multiple-choice questions? If all students had been able to do so, they would have reached the extreme upper limits of the speed subsection. Another question remained. Is it reasonable to expect that competent eighth-grade pupils should be able to vary reading rate according to purpose and content? An attempt to answer these questions will be discussed later.

Examination of the results in the vocabulary section of the Gates test revealed no particular need for further testing. However, the comprehension test was considered to be limited in scope. It is comprised of twenty-one short paragraphs which gradually increase in reading difficulty. The high scores on this subsection seemed to be justified. However, an informal analysis of reading chapter-length materials was considered necessary and later administered.

Presentation of Data: Iowa Every-Pupil Test of Basic Skills

As indicated earlier, the *Iowa Every-Pupil Tests of Basic Skills* was also administered in September. Only results of subtests "A" and "B" are shown in Figure 3. It was decided by the writers that these data were sufficient to establish high achievement levels for the twelve pupils selected. As can be observed in Figure 3, scores in comprehension and vocabulary essentially support the findings of the *Gates Reading Survey*. The median score in comprehension was 10-6 while the median score in vocabulary was 9-5. All pupils were substantially above norms on the comprehension and vocabulary subsections of the Iowa. There were, however, some relatively low scores in map reading (see Case Nos. 2, 3, 4, and 12). Case Nos. 3, 4, 5, 6, 8, 10, and 12 were comparatively weak in the "use of reference" subtest. Scores on index, dictionary, alphabetizing, and graphs were characteristically substantial.

FIGURE 3

Scores on the Iowa Every-Pupil Tests of Basic Skills

Case No.	Comprehension	Vocabulary	Map Reading	Use of References	Use of Index	Use of Dictionary	Alphabetizing and Graphs
1	11-3	10-7	10-6	9-0	9-7	10-8	10-3
2	10-9	10-1	7-5	9-0	8-8	9-6	8-8
3	11-0	10-4	8-0	8-0	8-0	10-8	9-8
4	10-0	9-4	7-2	8-0	9-7	10-1	10-0
5	10-1	9-7	8-5	5-5	8-4	8-9	8-3
6	9-8	9-2	11-2	6-5	9-5	10-1	9-8
7	11-3	8-6	9-5	8-5	9-5	10-1	10-3
8	10-5	8-6	10-0	6-5	8-4	8-9	9-3
9	10-0	8-7	10-3	8-5	10-1	9-6	9-8
10	10-0	10-4	10-6	7-0	9-5	8-4	9-8
11	10-8	10-7	10-3	9-5	9-7	8-9	10-7
12	10-9	8-9	8-0	7-5	8-4	10-8	8-3

Scores are expressed in grade equivalents.

ABLE PUPILS

Space here does not permit recounting the analysis of standard scores on the Iowa test. Weaknesses were noted, as mentioned above, in map reading and use of reference materials. Appropriate notations were made to guide the instructors in formulation of a corrective program.

Informal Testing

Comprehension. It is recognized that standard tests of comprehension are necessarily designed to be easily administered and scored. This precludes the possibility of testing comprehension in chapter-length selections in various types of materials. Therefore, a series of individual interviews was arranged in an attempt to assess the students' ability to approach chapter-length materials. All pupils were vague with regard to reading for general ideas, reading for details, and specific study approaches. *Reading was just reading.* It was believed that special work in reading chapter-length materials was indicated.

Flexibility test. In order to augment and clarify the speed subtests of the *Gates Reading Survey,* an informal test of rate flexibility was devised. Materials for the test were selected from the *Reading Laboratory*[4] published by Science Research Associates. The authors, Don H. Parker, *et al.,* have accumulated a great deal of interesting reading material designed for practice in speed and comprehension. The materials are graded as to readability by the Lorge and Dale-Chall formulas. The materials are divided into speed and comprehension exercises. There are fifteen speed selections and fifteen comprehension selections on each grade level from grade three through twelve. Selections vary in subject matter and include, among others, materials relating to science, biography, literature, music, art, and history. By experimenting with the graded materials, it was found that all twelve pupils could read and comprehend materials at tenth-grade level or above. With this information, a rate flexibility test was devised.

Reading selections were chosen from third-grade, fifth-grade, seventh-grade, and tenth-grade levels. Each pupil, individually, was then given a rate flexibility test. Each was asked to read

silently the graded paragraphs, in turn, from simple to difficult. The reading of each selection was timed with a stop watch and the percent of comprehension recorded when the student responded to the multiple-choice question accompanying each selection. In the interest of simplicity only the rates on easy material (grade three) and difficult material (grade ten to twelve) was placed in Figure 4.

FIGURE 4

Flexibility Test

Case Number	Rate on Easy Material	Rate on Difficult Material	Flexibilty Index
1	510	330	180
2	520	408	112
3	360	330	30
4	360	282	78
5	228	210	18
6	282	216	66
7	252	234	18
8	204	200	4
9	276	240	36
10	310	282	28
11	390	288	102
12	240	198	42

All rates are expressed in words per minute.

Flexibility Index represents the difference in reading rate between easy and difficult materials.

It was noted that Case Nos. 1, 2, and 11 demonstrated superior flexibility as compared with other students. For example, Case No. 1 read and comprehended easy materials at 510 w.p.m. By subtracting the rate in difficult material from the rate in easy material, the flexibility index of Case No. 1 was found to be 180 w.p.m. (see Figure 4). Case No. 2 had a flexibility index of 112 w.p.m. A sharp contrast can be noted by inspecting the flexibility index of Case No. 8. This student read simple material only four w.p.m. faster than difficult material. The median flexibility index for the group was found to be thirty-nine w.p.m. The low flexibility index was four w.p.m., the high 180 w.p.m. The range in flexibility index was 176 w.p.m. which indicates a highly variable characteristic.

After the testing period—both informal and standardized—

was completed, it was decided to devise an improvement program designed to develop study skills in chapter-length materials using textbook selections with which the students were currently engaged in their regular school program. In addition, the corrective program was directed toward improving the flexibility index in relationship to difficulty of materials read. To put it more concretely, we hoped that the twelve students could be taught to shift gears to the end that easy materials would be read faster than difficult materials. It was further hoped that reading rate could be improved at all levels of difficulty.

The Corrective Program

Study Skills. The standard tests results revealed comparatively high grade-equivalent scores in comprehension. However, it is not feasible, in a standard test, to use chapter-length selections for testing purposes. As indicated previously, pupils were vague concerning study approaches in regular school work. Accordingly, a program was devised to improve study approaches.

The pupils were taught how to survey a chapter to discover: (1) the general content of the chapter, (2) the author's plan for presenting material, (3) the location of introductions and summaries, (4) significance of illustrative materials such as maps, charts, pictures, and the like, (5) relationship of the chapter to the book, (6) careful examination of headings and sub-headings, and (7) location of glossary, index, and other printed parts of the book. Several types of books were used to familiarize pupils with a variety of organizational patterns and content.

After the survey of the chapter, pupils were asked to read carefully the introduction (if one was included). After reading the introduction, the chapter summary was read where applicable. The survey and the reading of introduction and summary is believed to contribute materially to a reader's general awareness of the content of the entire chapter. The next step is that of changing headings of chapter subsections into question form. This can be done by writing questions or by simply keeping them in mind.

The first reading of the material begins at the first subsection and continues to the end of the subsection. At the end of the subsection the pupil either recites to himself or reflects upon whether his question or questions have been answered. In the first reading pupils were discouraged from underlining, or reading for detail. Each subsection is read in turn as quickly as possible consistent with good comprehension of general ideas.

During the second reading, pupils were encouraged to selectively underline where they believed necessary. Only key words were underlined. An example of selective underlining follows:

> What Rights Did The English Colonies Bring To The New World?
>
> The last *stop* in our journey is at the little *home* of *Jonathan Blake* in *Massachusetts Bay Colony*. *Jonathan* was a *free man* when he *came from England* to *make* a *better living*, and his *life* in *America* is much *freer than* that of *Fernando* or *Pierre*. He *owns* his *house* and *farm*, which he is *free* to *manage* as he *wishes*. He has a *right* to *share* in the *government* of the *colony*. He may *vote* for *representatives* who become *members* of the *assembly* for the whole *colony*. This *assembly decides* many important *questions, including* the *taxes* which each *colonist* must *pay*. Jonathan *also* has certain other rights. For example, he *cannot be punished* for a *crime unless* he has been *found guilty* by a *group* of his *fellow men* called a *jury*.

It is believed by the writers that selective underlining requires more thinking on the part of the reader as compared with solid underlining of material. Moreover, many pupils have found that, in review reading, it is possible to grasp general concepts through reading only the underlined words.

It should be noted that "key" words are underlined, not "big" words. The little word "but" is often a key word. Other short but important words may be among others, "before," "after," "first," "second," "however," "if," etc. Good selective underlining will vary from pupil to pupil. Each is encouraged to underline as much or as little as necessary to highlight the concept.

Three weeks, four 40-minute periods per week, were given to practice in this technique. Regular textbooks were used for practice material and pupils were encouraged to use the approach while doing homework. It was pointed out to pupils

that the approach was to be modified according to pupil purpose and relative difficulty of material.

Details in the chapter were handled differently. After general concepts were familiar, pupils then read for detail. Names, dates, places, events, and the like were thus associated with the general concepts. Some pupils preferred to underline details in a different color. It is believed by the writers that details can often be memorized while concepts need to be understood. Probably few people can read difficult material for both general concepts and detail simultaneously.

Flexibility training. After three weeks of work designed to increase efficiency and comprehension in chapter reading, it was decided to begin work to increase flexibility of rate.

Research regarding the relationship between rate and comprehension is confused. Some are willing to assume that fast readers are always good readers. Therefore, these people assume that a desirable way to improve comprehension is to teach pupils to read faster. Unfortunate consequences may result from assuming that speed and comprehension are so closely correlated. Indiscriminate rate training may often result in teaching the pupil to *miscomprehend more rapidly.* Part of the confusion is due to the fact that results of a speed test cannot be very useful unless the results are coextensive with a test of comprehension. It is very difficult, if not impossible, to devise a standardized test of speed and one of comprehension in such a way that neither score is dependent upon the other. We know that speed without comprehension is useless. Low comprehension scores on tests received by bright pupils can be a result of overcautious procedures probably caused by an unnecessarily slow, inflexible, habituated, rate. While it is not easy to devise and standardize mutually exclusive measures of speed and comprehension, research indicates that efficient readers adjust their rate according to the difficulty of the material and the purpose for which they are reading.

As shown in Figure 4, only three pupils (Case Nos. 1, 2, and 11) demonstrated considerable flexibility in rate between third-grade material and material rated between tenth and twelfth-grade.

All pupils began rate training in third-grade material selected from *Science Research Associates Reading Laboratory*. After a warm-up period, pupils were timed on each exercise. Timing was done with a stopwatch. The instructor placed time in seconds on the blackboard. When a student finished reading, he copied the last number written on the board. Then, without rereading, he answered the questions, scored them by using the key provided, and recorded his comprehension score and rate on his personal data card.

Since pupils had learned earlier in the experiment to formulate questions to guide their reading of chapter-length materials, it was decided to adapt this question-first technique to rate work. Accordingly, pupils were given ample opportunity to study the questions before reading the selection. The procedure of reading the questions first is considered to be sensible even in rate work. Mature readers rarely, by choice, read and then answer questions. It is unfortunate, in the opinion of the writers, that school assignments are often given as follows: "Read the chapter, then answer the questions at the end of the chapter." Inquisitive, participating readers wish to read to answer questions or bring information to bear upon a problem. The reader in this situation is not passive, he makes demands upon the writer as he seeks information. Moreover, it is believed that where pupils read to get answers to questions, rate is increased without loss of comprehension. The procedure of reading questions first seemed to encourage confidence. All the pupils preferred the question-first technique.

No machines, eye-span exercises, phrase-reading exercises, and the like were used. Pupils were asked to read as quickly as they could and still maintain adequate comprehension. Since the S. R. A. materials are graded as to readability, the twelve pupils were practicing speed reading at many different levels. When they were able to read quickly and effectively at a given level, they asked to try more difficult selections. Pupils exercised good judgment. Careful examinations of the individual data cards were made each day in order to furnish the instructors with information necessary to guide the pupil. From time to time, some were helped to reduce excessive head movement

while reading. Early in rate training experience some pupils were helped to overcome lip movement.

All pupils began at third-grade level. They progressed to increasingly difficult material at their own discretion. At the end of the rate training, all were practicing in materials of tenth-grade level, or above. Four pupils were reading at twelfth-grade level.

The final results are shown in Figure 5. By subtracting the rate in column 2 from the rate in column 3, one arrives at the gain (in words per minute). This difference was placed in column 4. As can be seen in column 4, the gain varied from 66 to 630 words per minute. All pupils except Case Nos. 6

FIGURE 5

Gains in Rate on Easy and Difficult Material and Flexibility

Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9
Case No.	Rate on Easy Material (Nov. 21)	Rate on Easy Material (Nov. 3)	Gain	Rate on Difficult Material (Nov. 21)	Rate on Difficult Material (Nov. 3)	Gain	Flexibility (Oct. 12)	Flexibility (Nov. 21)
1	816	510	306	600	330	270	180	216
2	960	520	440	660	408	252	112	300
3	510	360	150	396	330	66	30	114
4	540	360	220	396	282	114	78	144
5	600	210	390	390	228	162	18	210
6	360	282	78	330	216	114	66	30
7	318	252	66	276	234	42	18	42
8	642	200	242	396	204	204	4	246
9	480	276	104	300	240	60	36	180
10	900	310	590	390	282	114	28	510
11	1020	390	630	500	288	212	102	520
12	630	240	390	396	198	198	42	234

All figures are expressed in words per minute.
"Easy Material" refers to third-grade level.
"Difficult Material" refers to tenth to twelfth-grade materials.

and 7, column 4, made substantial rate gains in simple material. The median gain in rate in simple materials was found to be 279 words per minute.

Rates in difficult material are shown in columns 5 and 6. The difference between columns 5 and 6 represents gain in rate and these data are shown in column 7. The smallest gain was 42 words per minute and the largest gain was 270 words

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5	600	210	390	390	228	162	18	210
6	360	282	78	330	216	114	66	30
7	318	252	66	276	234	42	18	42
8	642	200	242	396	204	204	4	246
9	480	276	104	300	240	60	36	180
10	900	310	590	390	282	114	28	510
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Rates in difficult material are shown in columns 5 and 6. The difference between columns 5 and 6 represents gain in rate and these data are shown in column 7. The smallest gain was 42 words per minute and the largest gain was 270 words

per minute in difficult materials. The median gain was 139 words per minute.

Flexibility data were placed in columns 8 and 9. In column 8 are the flexibility data recorded October 12, the beginning of the six-week experiment. Flexibility scores represent the rate differential, in words per minute in simple material as compared with rate in difficult material. Case No. 8, column 8, read simple material only 4 words per minute faster than difficult material. In contradistinction, Case No. 1, column 8, read simple materials 180 words per minute faster than difficult materials.

In column 9 are the final flexibility data. Case No. 11 established a flexibility of 520 words per minute between simple and difficult materials. For Case No. 6, flexibility was only 30 words per minute. Median flexibility in October was 39 words per minute. Median flexibility in November was 213 words per minute.

Actual rate training *per se* was begun November 3 and completed November 21, during which time twelve 40-minute periods were scheduled. However, it is believed by the writers that preliminary work in chapter reading with practice given in reading for general ideas served as a good foundation for rate work.

Interviews and Testing After Three Months

Three months after the special teaching had been finished, the pupils were interviewed individually. Each was asked to comment concerning the value of the practice work in chapter-length materials. In general, selective underlining was considered to be the most helpful. Four pupils felt that little value was received from the attempt to improve study approaches as described in this article. All but three pupils reported that the procedures learned during the experiment were currently being used. At least eight of the twelve pupils were enthusiastic concerning their progress.

Finally, each pupil was given a rate flexibility test to determine whether gains made were maintained after the three-months' lapse. Rate of reading in both simple and difficult

materials dropped for all but two pupils; however, all pupils maintained a substantial net gain. The highest net gain in difficult materials was 396 w.p.m. The lowest net gain was only 12 w.p.m. Flexibility (difference between w.p.m. in simple and difficult materials) was enhanced as compared with the initial test results. All but three pupils showed a net increase in flexibility. Perhaps the most important gain can be stated thus: *All but three pupils read difficult materials faster (even after three months' elapsed time) than they did simple materials at the beginning of the experiment.*

Conclusions

1. Correctable deficiencies in reading may exist among pupils whose achievement is high.
2. Skill in paragraph reading, as measured by standardized tests, is not a good measure of whether a pupil can effectively manage chapter-length materials in practical situations.
3. All standard tests results should be carefully analyzed to determine what is being measured and how it is measured.
4. Rate Flexibility Tests are useful diagnostic devices.
5. Pupils tend to read at a given speed regardless of materials or purpose.
6. Rate training should begin with simple materials. Adjustment in rate or difficulty of materials should be made when comprehension consistently drops below 80 per cent.
7. Pupils should take an active part in deciding when they are ready to increase rate.
8. No particular rate can represent the goal for all pupils. The characteristic is highly variable even among able pupils.
9. The goal of rate training is not directed toward set norms but rather toward individual flexibility. Pupils can learn to "shift gears" as materials and purpose change.
10. The typical practice of saving only standard test profiles (outside covers) while destroying the test itself, is contraindicated. The whole test is needed if full benefit is to be derived.
11. Skill development in reading should be taught at all grade levels and include all pupils.
12. Improvement in rate and flexibility were substantially present after three months had elapsed from the end of the teaching cycle.

While this experiment was limited in scope, it presented some evidence that reading problems of able pupils are often unnoticed. Many able pupils are retarded in reading regardless of high achievement established by standard norms. If Johnny

is really to grow in reading at a rate commensurate with his potential, teachers on all levels from kindergarten through college have a significant responsibility. The early struggle of the first-grader to build a sight vocabulary and the task of the graduate student in handling an extensive bibliography are all part of the complicated reading process.

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Television, Books, and School Marks

ARTHUR S. McDONALD

RECENTLY THERE HAS BEEN a great deal of speculation about the relationship of the number of hours spent watching television to school marks and to reading. In the past few years conflicting reports have been published from time to time concerning these relationships. Some writers have variously pointed out that there is more reading being done today than a decade ago, that there is less reading being done, or that there is more reading being done by fewer people. Others have ascribed such outcomes to the effect of television. Thus television has been hailed as the stimulant to reading, a determent to reading, or of no effect.

Recent studies have shown practically no relationship between the amount of televiewing and scholastic performance.

There is a possibility that, in previous studies, any relationship between time spent televiewing and scholastic performance was masked by the middle range of the sample distribution. Accordingly, this present study was designed to investigate the admitted TV viewing patterns of the top and bottom 27% groupings of a representative sample of high school students. The division into these groups was made on the basis of scholastic performance. Kelley has shown that this type of grouping gives the best discrimination. In this report, the upper 27% of the sample will henceforth be designated as the High Achiever group. The lowest 27% will be termed the Low Achiever group.

This study surveyed, by means of *coded* questionnaires, the amount of time high school students claimed to devote to television and the programs they said they regularly watched. 1650 students in Grades 10 to 12 in high schools in Milwaukee, Chicago, and the Albany area were used in the study.

The average viewing time claimed by the entire survey group was 13.5 hours a week. This corresponds closely with Witty's findings.[1] The mean time spent by the High Achiever

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group in watching television was 8.5 hours a week. The Low Achiever group spent nineteen hours a week televiewing. Althought the *difference* between the two groups in mean viewing time is statistically highly significant, the relationship to scholastic achievement within the groups is relatively low. This finding accords with most of the previous studies.

The twenty television programs most often listed by the High Achiever group were (in order of frequency of mention):

1. Maverick
2. Loretta Young
3. Perry Como
4. Father Knows Best
5. Steve Allen
6. Ozzie and Harriet
7. Sunset Strip
8. Movies (unspecified)
9. Bob Cummings
10. Wagon Train
11. American Bandstand
12. Real McCoys
13. Dinah Shore
14. Dick Clark
15. Whirley Birds
16. Gunsmoke
17. Lawrence Welk
18. Saturday Night Theatre
19. Sugarfoot
20. Playhouse 90

The twenty programs listed most frequently by the Low Achiever group were:

1. Movies (unspecified)
2. American Bandstand
3. Dick Clark
4. Maverick
5. Ozzie and Harriet
6. Shock Theatre
7. Rifleman
8. Peter Gunn
9. Sunset Strip
10. Wyatt Earp
11. Arthur Murray
12. Highway Patrol
13. Perry Como
14. Loretta Young
15. Wagon Train
16. Real McCoys
17. Sugarfoot
18. Cheyenne
19. Father Knows Best
20 Sea Hunt

Using the Flanagan method, certain TV programs were found to discriminate between the High and Low Achievers. Because of the preponderance of Milwaukee students in the sample, only Milwaukee respondents were used to select programs of this nature. The responses of the students in the Chicago and Albany areas were then used to validate these programs as discriminators of scholastic performance. Eleven programs were shown to have predictive validity of moderate power.

TV AND GRADES

It is interesting to note that the high achievers do not, on the average, claim to view television as much as do either the low achievers or those in the middle of the scholastic range. Furthermore, the high achievers in the sample listed a greater number of television programs which demanded a purposeful, intellective approach. Practically all of those claiming to regularly watch programs such at Meet the Press, Face the Nation, etc. were in the High Achiever group.

In general, it may also be said (within the limitations of the sampling used) that the low achievers named a greater number of programs with conventional hero and villain plots. Many of this group apparently sit glued for hours at a time to their TV screens watching programs which make little, if any demand, upon their intellects. For them, it is the ceaseless drum of horses hooves, the staccato bark of the six-gun, the drip of blood on countless cow-town streets. Many of the sample respondents evidenced their passive surrender to the hypnotic eye of the television set by writing that they spent thirty to forty hours a week watching "just anything which happens to be on."

Although there are educational television channels available in Chicago and Milwaukee, the survey shows practically no claimed regular free-time use of them. Only twenty-five of the 1460 students in Milwaukee and Chicago said they regularly watched programs which appear on these educational TV stations. Of the programs on commercial television which may be classified as educational in nature or content, only a minority of the high achievers admitted watching any of them regularly.

Claimed reading habits of the students in the survey differed significantly. The High Achiever group reported an average of four hours a week spent in reading books not connected with class assignments or school work. The Low Achiever group claimed a mean of 1.1 hours a week on voluntary reading.

In this study, the books claimed as read by the students were classified in one of the following two categories: "academic, theoretical, cultural and classic:" or "current events, popular and best sellers, adventure." These categories had previously been established on *a priori* grounds by Stern *et al.* and used in a study of college students.[2]

Based on Stern's findings, the assumption was made that high achievers would, in the main, be characterized by highly purposeful and intellectual activities, with a lesser interest in purely recreational type reading.

Books listed by students in the sample groups were classified into the above categories by a member of the Marquette University English Department. This instructor had no knowledge of the students' academic or television performance. The results follow:

TABLE I

Books Read by High and Low Achievers

	Per Cent Preference	
	High Achievers	Low Achievers
Academic, theoretical, cultural and classic	51	14
Current events, popular and best sellers, adventure	49	75
Total	100	89

The relationships between these book categories (taken separately) and scholastic performance, computed in accordance with the procedure developed by Flanagan, are of moderate magnitude. The relationship between the pattern of reading (both types of categories taken together) and scholastic performance is substantial. This suggests that high achievers engage in voluntary reading which is more purposeful and intellective than that done by low achievers. Thus, the high achievers not only claim to read more, but they read books which demand more intellectual capacity than do the low achievers.

The group in this study claiming the least voluntary reading, the Low Achiever group, read more than surveys over the past decade have shown the adult population to read. Asheim notes that there are few adults in the U.S. who do much reading of a purely voluntary sort. Furthermore, reading shows a significant drop at the school-leaving point.[3]

It may be that television is only part of a much larger problem. Certainly, it has received a great deal of attention because of its great accessibility, the dramatic impact it seems to have made on leisure-time habits, and the ease with which

children (and adults) can use it. But the real problem may result from what some observers have seen as the current stress on reducing the effort required for all activities. It cannot be denied that the bulk of television presentations do virtually all the work for the user. Perhaps, too, there is an element of guilt in some of the protestations. Some adults may be fearful that their children will emulate their practices rather than their admonitions. (Surveys show that average adult viewing time is about the same as the mean of this high school sample.)

Be that as it may, this survey showed that low achievers did relatively little voluntary reading. Most of this reading was of the ephemeral, low demand type. The low achievers did a great deal of televiewing. Most of this, likewise, was of the highly ephemeral type which placed little, if any, demand on the viewer for either effort or participation. But little of the reading reported by this group had any more value than the bulk of the televison programs which they watched. (Some uncritical persons, however, have acclaimed reading of any sort, overly impressed by the form of a book, without enough regard for its nature.) A mystery novel, nevertheless, is seldom more profound, just because of its book form, than a serious discussion of contemporary problems on one of several television programs. Neither is it necessarily superior to watching a mystery program on television.

It may be that both television activity and reading activity reflect the individual's degree of willingness to engage in highly purposeful, intellective activities. In part, this willingness would be based on individual *ability,* taste, and discrimination of excellence. These are largely attributes of training and education. Reading requires more ability than televiewing. Televiewing of serious, thought-provoking programs requires more ability, and much more active participation of the viewer than do shows of a stereotyped nature.

Therefore, it may be said that watching television is not *per se* bad; reading is not *per se* good. It is true that reading can (and perhaps more often than television does) engage the mind of the reader and compels him to meet the author at least part way. It is also true that television can (and perhaps too often

does) occupy time without occupying the mind of the viewer. Television can be a comforting distraction from the fatigues and anxieties of the day for one who has grappled with challenging problems; it can be an opiate for the drugged viewer who sits thoughtlessly watching the flicker of the cathode tube.

Whether reading or television activities can be judged to be active or passive, whether they distract or challenge the intellect depends on their content and the user's purpose rather than on the medium of presentation.

Reading of the academic, cultural, classic, theoretical type requires not only much more reading ability but also a more active approach by the reader. It involves more effort than does reading of the ephemeral sort. To successfully pursue this type of reading the student must have been trained to develop the essential reading skills, must have the motivation to seek essentially delayed-reward goals, and must have established goals which demand these energy-expending activities.

Similarly, television programs of the cultural and theoretical class demand active participation by the viewer. He must be able to listen effectively and thoughtfully, assimilating what is worthwhile to him in terms of his experiential background and current estimates of future growth needs. This type of listening ability, to a large extent, is the product of training. Many able students lack it. Perhaps most of the low achievers lack this ability. Again, the student must have developed goals which lead him to seek active rather than passive participation.

In view of the relatively little use which is currently being made of television programs of the cultural and theoretical class, it seems idle to simply wish for more opera, travelogues, great plays, science, and other cultural offerings. As Asbell has pointed out, at the high cost of television offerings, sponsors are inclined to endorse the saying: "What most people want is what all people get."[4] (The cancelling of the Firestone Hour recently by a television network in spite of the sponsor's desire to continue this program is an example of network endorsement of this saying.)

Witty and others have pointed out the futility of simply deploring the possible evil effects of television or of wishfully thinking that everything will come out for the best. Properly

utilized, television can be a means of broadening the vista of the student, of awakening new interests in him, of challenging him to grapple with the problems of the day. Such desirable effects are unlikely to occur by themselves. So long as viewing skill and taste are not highly developed in the majority of the viewing population, it is hard to imagine a majority audience viewing seriously.

The survey results may be suggestive in this regard. Five of the programs listed by Witty and Kinsela[5] as favorite TV programs of teachers are among those which discriminate the high achieving students from the low achievers; the other five of the teachers' top ten were rarely listed by members of this sample. This may suggest the need for teachers to become aware of the difference between the types of programs which they prefer and those preferred by most of their students. It also may imply the need for teachers to make explicit to themselves the reasons why they prefer certain types of programs.

Teachers should ask themselves what they are doing to teach students to separate the chaff from the wheat of television programs. What are they doing in a systematic way to improve the student's ability, taste, and discrimination of excellence? In this regard Asheim points out that it is just as appropriate for education to help the student develop objective and critical standards to apply to what he sees on TV as it is to aid him in applying critical taste and objective standards to written works.[6]

Brodbeck, in a recent report on unconscious effects of TV, movies, and comics, pointed out that parents and teachers can help to immunize children against bad effects of television by putting into their reach a wide range of literature and art, and by encouraging evaluation of what is seen and read. He reported that his research showed that stimulating use of evaluative thought lessened sheer emotional impact.[7]

If the assumptions put forth rather tentatively in this study are granted, then the problem becomes the larger one of training students to make the wisest and best use of resources available through all the media of communication. Students should be taught how to assess the comparative values of short-term goals and long-range goals. Teachers should seek to aid their students to define the outcomes they seek. They will also

educate their students in ways of choosing media most appropriate for given objectives. In pursuing these educational goals, television can be used as an aid to stimulate students to read books they might otherwise miss. Reading will be used to stimulate discussion and thought about what happened to story content on television and why. Discussions and illustrations may be prepared to help students decide how to maintain a balanced program—not alone of television and reading—but of all their activities so as to best reach their defined objectives.

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[5] Witty and Kinsela, *op. cit.*

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Speeding Up Reading: A Self-Help Program for College Freshmen

LEWIS E. WEEKS, JR.

ALTHOUGH MANY UNINFORMED AND EXAGGERATED attacks are being made on the reading programs of our schools, it is true that numerous students complete their public school education and reach college without being able to read well; and almost no college student reads as well as he could.

Another and related problem is also demanding attention, although it is one we seem reluctant to face. Our world has become small in the time-space sense, as it has become large in its complexity. It becomes increasingly necessary that we learn not only more and more about less and less, but more and more about more and more. Areas of traditional knowledge have expanded, and new disciplines have sprung up.

Here at the University of Maine, an approach to the reading problem has been made on a modest and limited experimental basis with gratifying results. The outstanding feature of this plan is that it involves very little class time and a relatively small amount of study time on the part of the student. Since most learning still takes place through reading, this plan was aimed primarily at helping the student increase his reading speed.

Two composition classes participated in the experiment in two successive years, 1956-57 and 1957-58. About forty-five students in all took part in the work, but complete records were maintained by only twenty-seven. The records of these students provide the basis for the figures given in this paper. However, none of the partial records showed any deviation from the patterns established by the others. First, as a check on the results of the program, Form A of the "Diagnostic Reading Test, Survey Section (From Grade 7 through College Freshman Year)" was administered at the beginning of the year and again, in a different form, at the end of the year. This

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test measures speed and comprehension of story type material, vocabulary, and comprehension of study type material. The second phase of the program involved the use of Norman Lewis' *How To Read Better and Faster,* a challenging and effectively presented series of explanations and exercises designed to increase speed, comprehension, and vocabulary. Assignments were given in the book, principally in sections devoted to increasing speed, and were explained very briefly during class time. Progress results were copied by the students from the charts in their texts for the teacher's records. This was done on class time. Other than for these two minor uses of class time, the students were on their own as to the amount of time they devoted to the training, although suggestions were made. Whatever was done by the student was in addition to regular, unreduced assignments. Finally a reading list of novels and light non-fiction available in the library and of special interest to the group was drawn up, and the students were required to read books from this list. As a check on the reading, reports were written in class on prescribed days as part of the composition work. The nature of the subject for the reports was not known to the student until the class met and the topic was assigned. The papers were graded and corrected as class themes. The students were given three weeks to complete the first book, but rapidly worked up to a book a week. The reading was always in addition to the regular assignments.

The group that participated in this experiment is of particular interest for this study because it is composed of sub-college level students who in general are particularly ill-prepared in reading and writing. The University of Maine offers what is called the Two-Year Course in Agriculture. The program has four divisions—Dairy Farming, Mechanized Farming, Potato Farming, and Poultry Farming. The University Bulletin describes the program as follows:

> The objective of this program is to provide vocational training that will prepare young men to be better, more efficient farmers or agricultural service agents. . . .
>
> The semester period comprises twelve weeks of instruction. The fall semester commences late in October and the spring semester finishes early in May, enabling the student to engage in farm work from the beginning of the planting season to the close of harvesting.

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On the whole the students are farm boys whose lives have been devoted to the responsibilities and activities incident to farm life, and in whose work, even in school, there has been little reading and even less writing. Those responsible for the program recognize this fact in the course offerings, most of which are of a practical and laboratory nature. Generally the members of this group are responsible, mature, and earnest—willing and even eager to learn—though initially at least, somewhat skeptical of any but what they like to call practical knowledge.

The results of this attempt to help students increase their reading speed on their own initiative can best be seen through an examination of the accompanying charts. In Chart I, column 1 gives the rate of reading in words per minute from Lewis' first exercise in *How To Read Better and Faster.* Column 2 gives the rate in words per minute on the final set of speed exercises in Lewis. Column 3 shows the percentage gain in rate of reading based on the exercises in Lewis. Column 4 gives the rate from Form A, of the standardized reading test given at the beginning of the training period. Column 5 gives the percentile rating for this form based on a sampling of scores of college freshmen throughout the United States. Column 6 and 7 give the reading rate and percentile scores for Form B of the standardized test given at the end of the training period, and column 8 shows the percentage gain in rate of reading based on the improvement measured by the standardized tests.

Chart I—Speed

	Initial Lewis WPM	Final Lewis WPM	% Gain Lewis	Form A WPM	Form A Per	Form B WPM	Form B Per	% Gain Stand Test
Median	174	335	89	229	14	334	79	49
Average	187	358	97	225	13	341	81	54
Lowest	80	193	23	151	00	178	01	0
Highest	310	744	193	355	86	537	99	113
	1	2	3	4	5	6	7	8

Chart II shows graphically the percentile standings in speed before and after training and on the freshman placement tests. Chart III shows graphically the word-per-minute increases in speed before and after training based on Lewis figures and on the standardized tests.

Chart II – Percentiles
Median Scores

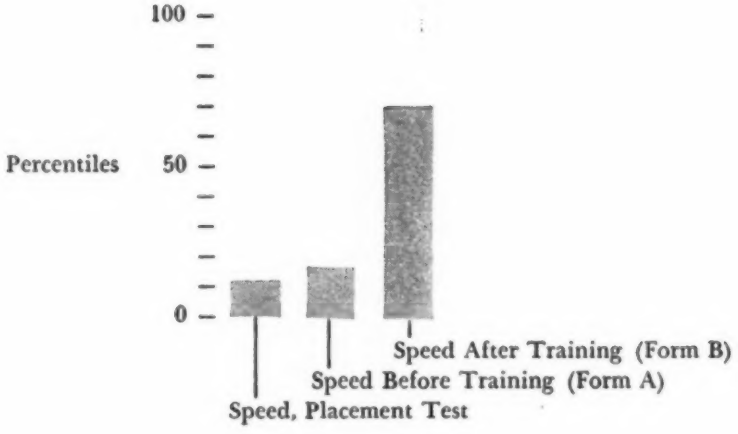
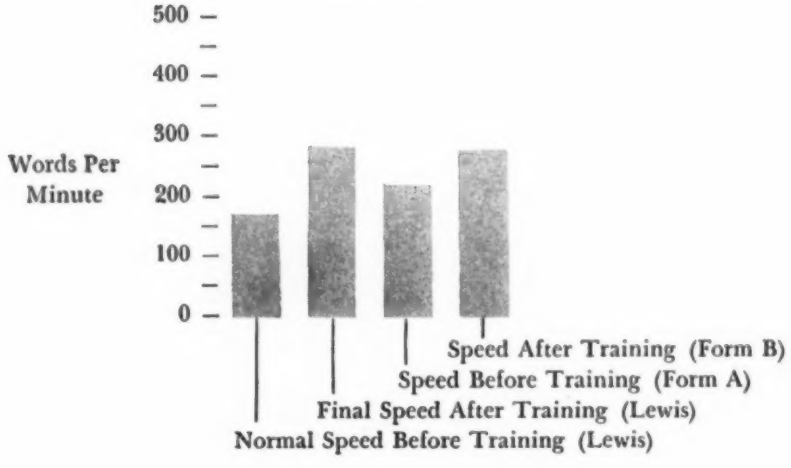


Chart III – Words Per Minute
Median Scores



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The next three charts, IV, V, and VI show respectively vocabulary, comprehension, and total scores as well as the percentile ranks for this group of students as compared to college freshmen. The last chart, VII, shows percentiles on speed, vocabulary, comprehension, and total scores from the reading tests taken by all incoming freshmen at the University of Maine as part of the entrance procedure. This test is Form Y,

Chart IV—Vocabulary
Standardized Test

	Form A		Form B	
	Score	Per	Score	Per
Median	36	21	35	19
Average	35	19	35	19
Lowest	15	00	14	00
Highest	51	75	54	87

Chart V—Comprehension
Standardized Test

	Form A		Form B	
	Score	Per	Score	Per
Median	23	10	26	20
Average	27	24	26	20
Lowest	8	00	15	01
Highest	36	89	34	75

Chart VI—Total Scores
Standardized Test

	Form A		Form B	
	Score	Per	Score	Per
Median	62	17	62	17
Average	62	17	61	16
Lowest	23	00	30	00
Highest	83	70	84	73

Chart VII—University Placement Test
Percentile Scores

	Speed	Voc	Comp	Total
Median	12	10	21	14
Average	15	14	23	15
Lowest	00	00	00	00
Highest	57	54	52	52

"Test C2: Reading Comprehension, Cooperative English Test, Educational Testing Service." The speed figure is not based on a word-per-minute rate, but upon the amount of the entire test completed in a given time. In spite of this fact, the correlation of scores, especially of the one we are interested in, speed, is fairly close. Both series of percentile scores indicate the very low quality of the students involved.

The immediate value of this type of program is clearly indicated by the fact that the median increase in speed based on the standardized test scores is from 229 words per minute to 334 words per minute, an increase of 49% (Chart I), raising this group of students from a median in the 14th percentile for college freshmen to a median in the 79th percentile (Chart I, Column 7), a change from a position far below to one well above average.

The rather significant differences of speed between the first Lewis figures and those of the first standardized test administered (Columns 1 and 4, Chart I), which result in the subsequently higher percentage of gain, based on the Lewis figures (Column 3), are explained by the fact that the original Lewis figure represents the students' habitual rate of speed, his normal rate without any sense of pressure or conscious effort to read rapidly such as would be present during a timed test, for example. This rate can be increased immediately and considerably without any training or any loss in comprehension merely through a deliberate effort to read rapidly. However, the close correlation between the final speed in words per minute achieved on both the standardized test and the final group of exercises in Lewis gives additional indication of the validity of the results. Moreover, since the students involved were in most cases individuals who read little on their own and whose other course work during the year was, for the most part, based on laboratory work or lecture-demonstrations and not reading assignments, the results achieved may be attributed quite exclusively, I believe, to the students' efforts.

The median vocabulary, comprehension, and total scores earned both before and after speed training are consistently near the 19th percentile in all cases. They show no significant changes as a result of the training. A marked difference, how-

ever, does exist between the rate of reading score and the other scores at the beginning of the year. The median for speed in the 14th percentile is significantly lower than the scores in the other areas tested. Yet it is in this very area where effort was expended that this sub-standard group pulled itself up almost to the 80th percentile with no loss of comprehension, a remarkable and worthwhile achievement.

The comprehension scores include the scores of both story and study type material. There was no significant difference in comprehension scores before and after training in either type of material, although a marked decline might have been expected by those unfamiliar with the mechanics of reading and comprehension, considering the significant increase in speed. On the other hand, there was no increase in comprehension or vocabulary, as might have been expected. Probably if as much emphasis had been placed on comprehension and vocabulary as was devoted to speed, results would have been equally gratifying. That the total scores show no important change results from the fact that rate of reading is not included in the total score.

CHART VIII

	Words Per Minute				Vocabulary				Comprehension				Total			
	Form A		Form B		Form A		Form B		Form A		Form B		Form A		Form B	
	Score	Per	Score	Per	Score	Per	Score	Per	Score	Per	Score	Per	Score	Per	Score	Per
Median	299	60	308	65	45	52	50	71	33	67	32	58	80	62	82	67
Average	304	56	319	64	44	50	49	64	33	65	32	60	78	55	82	66
Lowest	230	16	234	19	32	12	30	08	20	05	27	24	59	13	66	24
Highest	442	98	442	442	98	59	99	60	100	39	99	97	100	100	99	100

To further check on the validity of the self-help program, the same standardized tests were given at the beginning of the year (September 1958) and again at the end of the year (May 1959) to members of two freshmen composition sections in the regular four-year program. As a result of section changes at mid-semester and drop-outs, only twenty-six of the original fifty-odd remained at the end of the year to take the Form B Test. However the pattern of results is consistently similar. Although these students are obviously of a higher calibre than those participating in the self-help program, without specific training, they regularly showed only a very slight improvement in reading speed, in marked contrast to the gains of the students

subject to training, as a comparison of the test results clearly shows (Chart VIII).

What conclusions may be drawn from this experiment? First of all, even with a group that is below average, rather remarkable improvement in rate of reading is possible *solely through the students' own efforts* under some slight guidance and encouragement. The fact that this improvement is self-improvement and did not take up class time nor teaching time is of great significance. Secondly, no loss of comprehension was experienced through the increase in speed. Finally and perhaps most important of all in these times, the improvement in speed, based on the median figure, suggests that the length of reading assignments could be increased half again and could still be covered in the time devoted to them now, with no loss of mastery. Or the student could do his regular assignments in two-thirds of the time presently required, leaving him free to take another reading course for every three such courses now carried, with no loss of effectiveness.

In addition to these three advantages, there were certain other aspects of the work that might be mentioned. Through the outside assignments in fiction, many of this group read a novel completely through for the first time, and in many cases to their own surprise, found that they enjoyed doing it. Very few of the students, according to a rough self-evaluation, put as much time as recommended into the practice exercises; yet all of them felt that the work was well worth while and would have it kept in the course. It was also apparent that the better and the more conscientious students—the two not always the same—made greater improvements than did the others. The implication here is that poor students can improve greatly, sometimes the improvement being quite amazing only because they are so slow to start with. On the other hand, the fact that the better students on the whole made even greater strides, supports the oft-presented view that our better students are loafing along unchallenged and are certainly working below capacity.

A Bag With Holes

HARRY R. WARFEL

SOMEONE HAS SAID that the human mind is a bag with holes. Medieval scholastics made much of the seven holes in the head. Sensations enter endlessly into the nervous system to etch themselves or to disappear. The possibility of total recall of one sequence and the impossibility of recalling a single sensory impression in another sequence serve as a reminder of a major problem in reading instruction: some reading remains as a permanent possession and some does not. The reading process, too, is a bag with holes.

Some holes are necessary. Like any sieve or filing system, some things are meant to be kept and some are meant to vanish. A good mind or sieve or filing system retains what is meant to be captured for whatever purposes the user devises.

In general the reading process is viewed as a necessary human action, one which every individual should master. An ideal of democracy is a minimum attainment expected from every person. Somewhat fallaciously it is assumed, despite the illiteracy of half the human race, that reading is a natural activity in which children will engage as readily as they breathe. The truth is that reading is an acquired art. It is neither a natural heritage nor a necessary act. It is an acquired personal possession.

The focus of attention must be upon the bag, not the holes. Putting aside all the problems involved in determining the nature of the human mind and its fundamental capacity to retain and filter out sensations, the teacher of reading must know the instrument which he uses. He must know the nature of the bag and the way to plug up some holes while leaving others undisturbed: the necessity for leak and for retention is inescapable.

II

The fabric of the bag is the system called language. Language, which is speech, comes to the human being as a cultural heritage. Before he can learn to read, he must be an expert

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user of the few sounds and intonational patterns that form the oral transmission code. Just as one cannot use a Morse code until one "knows" it, so a child cannot read the code of writing until he has an automatic command of its basis, the code of speech.

In English this code consists of thirty-three phonemes or individual sounds that mean absolutely nothing in themselves. Only when these nine vowels, twenty-one consonants, and three semivowels (*h, w, y*) are combined into socially intelligible groups do they have any meaning. These thirty-three sounds are paralleled by the twenty-six alphabetic letters of writing; they, too, have no meaning in themselves, and these letters when combined into words have only the meaning that is inherent in the group of speech sounds which the words replace. The group of letters in *pain* means 'a set of sensations related to hurt, suffering, anguish, distress, etc.,' in English, but the group means 'bread' in French. The sounds of the letter-groups differ in the two languages. Languages are structured organizations or systems, and any act involving these systems must be in accord with their operational principles.

Speech is also a rhythmic emission of vocal sounds in a time sequence. There are analogies with music in pitch, in stress or loudness, and in pauses. In combination with the basic speech sounds, the phonemes of pitch, stress, and pause create melodies to accompany or override the rhythms. These melodies and rhythms in speech are so consistent that they—like the march or waltz in music—are referred to as intonational patterns. The intonational patterns in declarative, interrogative, and imperative sentences differ greatly. Often it is possible to get the meaning of an utterance from an intonational pattern even if the vocal sounds are not themselves understood. In writing or print this meaning-giving device of speech is indicated by a few marks of punctuation and sometimes by italics, boldface type, or capitals. In most writing the intonation patterns—and the meanings carried by them—are not indicated at all; the reader must supply them. This hole in the reading-process bag is especially in need of being plugged, and the only way to do it is by requiring beginning and weak readers to read out loud.

The second meaning-giving device in the system of speech is

the regular and necessary arrangement of sound-groups into sentence-element-groups and sentences. The science of the systematic structuring of language is named syntax. This subject, which embraces the total set of operations, is usually dealt with under the heading of grammar. Included is the science of morphology or the changes that "words" undergo to express meanings (plural, past tense, etc.) or to fill certain positions or syntactical duties, as in "He gave him his books." The major principles that underlie the systematic operations of syntax are the grouping of words, word order in word groups, modification, function order of elements in sentences, apposition, compounding, and substitution. The interplay of these principles gives rise to most of the data discussable under the general subject of style, but seldom has any author or speaker been subjected to a full analysis of his syntactical deployment of the language. A huge hole in the reading teacher's bag is this lack of attention to syntax.

In ordinary usage, style is usually equated with vocabulary, the third meaning-giving device in language. The overemphasis upon vocabulary results from the vast word-hoard in the dictionary and from centuries of study devoted to the fascinating history imbedded in words. Some notions are current that an increased vocabulary leads to accuracy of expression, but there is no real proof of this. "Accuracy" is a relative term, and certainly in any scale of values accuracy in using the code or system is more important than the choice of one word or expression over its many fellows. There is no one way of phrasing any thought, but there are only a few systematic ways in which a thought may be expressed. That is, a language is a device like a printing press; it works within fixed limits and can perform only a certain number of operations. The knowledge of these limits and operations is essential to anyone who uses the process.

The overemphasis upon vocabulary has been particularly unfortunate in the teaching of reading. The nature of the English vocabulary has not been examined in relation to the use to which words are put. Words shift meanings. The *Oxford English Dictionary* shows that the five hundred commonest words have at least ten thousand meanings. These many meanings give rise to all sorts of problems of comprehension when

the words are viewed as words. But when these words are pronounced in the context of the sentence in which they occur, the problems disappear for native speakers, to whom reading instruction is primarily given.

The commonest words are largely undefinable as separate words. Words like *head, go,* and *move* seem precise until their full scope of usage is examined. Less precise are the three hundred language-machinery or structure-words like *a, an, the, at, by, be, may, who, that, where, what,* and *very.* These three hundred words appear once in every three words in normal English expression. If the total vocabulary of English is 600,000 (actually, counting proper names, the vocabulary runs into millions), these three hundred words that recur 33 1/3 per cent of the total wordage constitute only .005 (five-ten thousandths) of the unabridged dictionary.

It is, indeed, a very large hole in the reading instructor's bag that permits one-third of his students' wordage to be disregarded. These three hundred words are largely group-forming words that shape the utterances and the meanings, just as the warp and woof threads shape the overall nature of a cloth. The 600,000 words are the color-giving addition to the syntactical framework in which the structure words provide the necessary internal ordering of the fabric of thought. To say that vocabulary is of primary significance in the reading process is tantamount to saying that the color of a towel or the design upon it is more important than the fabric of which it is made. Only as the related systems of sound and syntax are understood can a teacher of reading enter successfully upon the enterprise of expanding a student's vocabulary.

III

For some reason there seems to be a notion that reading instruction should employ literary materials, especially fiction. Cut-down versions of classic novels are special favorites, as if the lure of great verbal art will snare illiterates in the same way fish are believed to prefer an artistic fly over an ordinary hook baited with an ordinary earthworm. Whether fish go after lures or worms is a moot question, but there is no doubt about the unwisdom of trying to get a weak reader to learn new language forms and new ideas while he is trying to learn the

reading process. It is the process, and only the process, of reading which is to be mastered.

Possibly the biggest hole in the reading-instruction bag is this failure to differentiate between the process and the end-result of the process. The process relates to needed eye perception in relation to possessed ear perception. The end result relates to personal power, culture, education, and social and vocational status. The end-result is a highly desirable accomplishment. But it is seldom possible—as it is pedagogically unsound—to try to teach the process and something else at the same time. In many human actions, mastery of the process must precede any performance in which an automatic flow of the process is essential to the success of the performance. In business the beginner starts at the bottom and works toward the top. In medicine a student spends years at study before he is permitted to prescribe for patients. The idea that a beginning reader or a weak reader should do what a medical student may not is absurd.

The process of reading is not in itself a language activity. Real language activity involves original, dynamic production of speech. Reading is a repetition of someone else's language experience. Totally different circumstances are involved. The acts are analogous to Van Cliburn's playing a sonata by Beethoven. However great the art of the performer, he is not the creator. Nor is the performer's art wholly of his own making. He must lend himself to the work being performed. The sound system, syntax, and vocabulary of a writing may differ so greatly from the reader's as to require special study, even as Debussy differs from Bach. The performance of reading—it is a performance—must follow a mastery of the techniques within the process—just as Cliburn practiced scales long before he ever played Bach.

The techniques in the process of reading do not become clear necessarily from extended practice in reading. It is often assumed that comprehension results from exposure to material. This hole in the bag is so obvious that its presence need merely to be mentioned. The holes that seldom are dealt with are in the bottom of the bag where they are seldom seen, for the reading bag stands in a dark corner of the schoolroom. These hidden holes can be labeled imagery, rhetorical structures, and re-

presentation. These are the holes that let an awareness of artistic maneuvering escape unseen.

Although some reading instruction concerns itself with similes and metaphors, the range of expression open to an artist through image-making is wider than is usually recognized. The embroidered A in *The Scarlet Letter* is easily seen, but how many readers notice the rocking chair in Theodore Dreiser's *Sister Carrie* or can understand Glenway Wescott's symbolic maneuvering of the bird in *The Pilgrim Hawk*. How seldom have literary critics, let alone ordinary readers, perceived "The figure in the carpet," the maneuvering of background symbols of light and dark, warm and cold, in Henry James' "The Beast in the Jungle." These seemingly decorative items enrich, intensify, and deepen surface meanings. To miss them is to call a brocade a piece of muslin.

To miss Walt Whitman's or Carl Sandburg's juxtaposition of images, as in "Song of Myself" or "Chicago," is to misread the poems. To miss Stephen Crane's animistic impressionistic pictorial devices is to misunderstand not only his art but also his message. To miss Hemingway's ironic juxtaposition of images of pleasant and unpleasant experiences in *A Farewll to Arms* is to lose his philosophy. The first three panoramic chapters of that novel lay the foundation for the understanding of the entire book. To read one word at a time is as useless as it is to listen to Debussy's "Afternoon of a Faun" one sound at a time. Some art proceeds one thought at a time, but some moves in long pictorial units, each of which is a unified picture. Such a work is Mark Twain's *The Adventures of Huckleberry Finn*. From the whole and from each picture and not from any detail must the meaning be derived. Only an expert reader can detect new formulas and act upon them. Most classical fiction has special imagery. Cut-down versions, by removing some of it, make almost impossible a full understanding of the writer's art and meaning.

The package in which writing is contained seldom gets much attention from reading teachers. This hole in the bottom of the bag lets escape the meanings inherent in the necessary shapes or organizations which unite sentences. A newspaper item, for example, proceeds from important to less important facts according to the writer's or editor's scale of values. The

assumption always lies behind a spot news story that, if space requirements demand, the removal of paragraphs from the end through to the second will still perserve the major facts.

Formal essays normally present the most important idea near or at the end. Newspaper items and formal essays are different in other ways, too. In general, newspaper items are inconsecutive, state facts and give no proof, rarely discuss the reasons for the events, and almost never place these facts in a context of a learned discipline. A formal essay is less concerned with facts than with the author's interpretation of them. He takes pains to impose schemes of logical analysis and of order upon his facts and thoughts. In this procedure he uses age-old methods: definition of terms, comparison and contrast, analogy, etc. The expert reader recognizes these devices and relates them to the overall thought pattern being developed. The skeletal structure and the expansion of it are kept in perspective. The meaning, the expert knows, is to be found in the structure of the essay as well as in the successive sentences.

Fiction generally depends upon its structural formula much more than is ordinarily realized. The first sentence, first paragraph, and first chapter are of great significance, and the last chapter, last paragraph, and last sentence must—and usually do —have a similar significance. Even more, the opening and conclusion must be in the same mood and tone. Where the beginning states the theme and the fundamental situation, the end must give the resolution of the action and the theme. *The Scarlet Letter* opens with a sentence that pictures people. The second sentence states the theme: sin and death are invitable facts of life. The rest of the first chapter gives the Boston setting and the ideas necessary to the evaluation of the events to follow. The succeeding chapters up to the last one present moments of the action in terms of the ideas given in the first chapter. The final chapter brings the action and the theme to a conclusion. The story outline is almost insignificant in contrast with the thought and artistic maneuvering of Hawthorne. To miss the ideas and the art, as they unfold in the narrative framework, is to miss the essence of the book. Yet only as a reader perceives this adroit arrangement of the necessary elements in the story can its full meaning be grasped.

There are not many structural formulas in literature. The

most subtly varied ones are in fiction and drama, but despite surface differences the same basic principles apply: first, tension must be created by characters in a context of time, place, and ideas; a climactic moment must force a decison; and the decison must lead to a finale of the action and a resolution of the theme.

Some fiction is plotted and some is not. Yet only slight differences set the plotted *The Scarlet Letter* and Howell's *The Rise of Silas Lapham* apart from the unplotted *A Farewell to Arms* and Dreiser's *Sister Carrie*. Essentially they are the same in basic organization; the real differences are in the syntax and imagery of the authors.

This moment might be an appropriate one in which the reader of this essay might ask himself how he has dealt with this essay's organizing image: a bag with holes. Has the intellectual basis been lost in a sea of emotional distaste? Are the reader's ideas chiefly about the image or the reading process? Would a comprehension test stress the bag or the process? Has the image made a logical structure possible? How do image and structure fuse?

The third large hole in the bottom of the reading-instruction bag concerns re-presentation, the art of a reader's projecting onto a mental stage the conversation, scenes, and action given by words. Since words are signs and also symbols, there are psychological steps whereby groups of words evoke mental images and/or concepts at the same time. Recent studies of the learning process, especially B. F. Skinner's *Verbal Behavior,* supply much valuable help in this area. Yet something further remains to be discovered about effective instructional procedures. In a sense the power to project images is parallel to that of being able to remember a whole score of a long musical composition on its first playing. What is known is that an almost immeasurable superiority marks the mind that re-presents reading materials. How to give every reader this ability is a topic deserving attention.

Some of the holes in the reading instruction bag are not likely to be plugged very easily. Some are there needlessly. The ones that seem most easily closed are those which result from the failure to relate writing to speech and from the inattention to syntax.

Reviews

FASTER READING FOR BUSINESS, by George D. Spache and Paul C. Berg; Thomas Y. Crowell, 1958, 298 pp.

George D. Spache and Paul C. Berg have written a timely book for business and professional men and women who feel the need to increase their reading efficiency. The text does not assume pretentions or talk down to the reader: it is geared to an adult level and maintains that level throughout the book; the tone is subdued in that no extravagant claims are made concerning the increases that may be expected in rate and comprehension.

The authors are well qualified to write on this subject. Spache is head of the Reading Clinic at the University of Florida, and his experience includes work with adult reading programs in various industrial and government groups. Berg is head of the Reading Clinic at the University of South Carolina, and is the co-author, with Dr. Spache, of *The Art of Efficient Reading.*

In *Faster Reading for Business,* the authors give four basic methods in rapid reading. These are previewing, skimming, reading for ideas, and scanning. They also discuss various propaganda techniques, mathematical and statistical techniques, vocabulary building, and listening and writing skills. A pre-test consisting of a general reading test and a test of reading flexibility is placed in the second chapter. The same type of testing is placed in the last chapter along with an inventory of reading habits and attitudes.

The authors have been collecting data on the tests of reading flexibility for sometime and it is believed that this is the first book to incorporate a test of this type. It is a welcome addition and should prove to be very revealing to those persons who take the test. The need for this kind of test has been recognized by anyone who works with adult reading improvement programs.

The chapter on the previewing technique is entitled Previewing—A New Way to Read. It is hoped that they mean this is a new way to read to the person who buys the book to improve his reading skills. Previewing was advocated several years ago by Dr. Robinson of Ohio State University as part of his SQ3R method of study. Therefore it is not a new technique to the more sophisticated reader.

The chapters on skimming and scanning differentiate between two techniques that are frequently thought to be synonymous. Skimming, as defined in this book, is the combination of previewing and attention to cue words in order to obtain more than previewing gives the reader. Scanning is defined as the rapid perusal of a paragraph or more to find the answer to a question. This technique is advocated for use with telephone directories, almanacs, dictionaries, charts, etc. As the authors point out, this is a method of rapid reading that is frequently used and may be improved with practice.

The two chapters devoted to critical reading—the reading of propaganda and statistics—avoid technical jargon and state in easily understood terms the various propaganda techniques and statistical techniques used to confuse an issue. It is believed that sufficient space is devoted to these

two areas of critical reading. If the reader wishes to pursue the subject further, the references at the end of each chapter will enable him to do so. This is true of all the chapters.

The book is well written, has enough practice material, and can be read at home. Anyone who follows the book with serious intent should be able to increase his reading efficiency considerably.

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TOWARD BETTER READING SKILL, Second Edition, by Russell Cosper and E. Glenn Griffin. New York: Appleton-Century-Crofts, Inc., 1959. 299 pp.

TOWARD BETTER READING SKILL (Second Edition) "is designed for college students in developmental reading," which, "on the one hand, . . . is distinguished from clinical help for handicapped readers," but, "on the other, . . . recognizes that almost anyone can learn to read better than he does," and "means improving general reading proficiency, increasing accuracy of comprehension, achieving some flexibility of rate."

For this purpose the text is admirably suited. It contains twenty-six interesting and informative selections, covering a wide variety of subject matter on three levels—popular or easy, "a comfortable adult level," and mature or very difficult. These selections are of sufficient length (from one thousand to two thousand words) for speeded reading, an important consideration in a text of this kind.

Each of these selections is followed by ten comprehension questions with multiple-choice answers. These questions are good; while most of them concern details, some deal with general ideas, the author's viewpoint, and between-the-lines implications.

At the end of the book are six progress tests which have been validated under controlled conditions and which are of comparable difficulty (level two). These tests are followed by twenty questions rather than ten, the authors say, "to give a more meaningful comprehension score." One wonders whether twenty questions after each of the twenty-six selections would not have been preferable for the same reason. Perhaps space would not allow this number.

A feature of this text not found in the first edition is the inclusion of "ten explanatory pieces . . . addressed to students . . . and designed to give an insight into the reading processes." These pieces, sufficiently detailed for developmental reading students, are a welcome addition. Speeded reading followed by a comprehension test provides good practice and is helpful, but most students will make better progress if they are given some information concerning what they must do in order to read with proficiency. However, some questions following these pieces might prove useful, especially in groups where each student works and progresses individually and where there is little opportunity for the discussion the authors suggest in their preface.

Worthy of notice are the discussion questions which make it possible to take up matters which cannot be adequately treated by objective-type questions.

Also helpful is the vocabulary study—either vocabulary lists or quizzes at the end of each chapter. Almost all students need to increase their vocabularies.

Further features of the text are conversion tables, answer keys, and progress record charts for both the reading selections and the progress tests.

To summarize, *Toward Better Reading Skill* is a good text for classes in developmental reading—as it should be, for both Cosper and Griffin were pioneers, and are now teachers, in the developmental reading program at Purdue.

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CONSIDER YOUR WORDS, by Charles B. Jennings, Nancy King, and Marjorie Stevenson. New York: Harper, 1959. 172 pp.

WEIGH THE WORD, by Charles B. Jennings, Nancy King, and Marjorie Stevenson. New York: Harper, 1957. 259 pp.

Because of the wide differences in ability among the students in a vocabulary building class, the exercises in a wordbook often are tedious and dull. The poor students recite too haltingly and the bright ones contemptuously rattle off the answer. CONSIDER YOUR WORDS doesn't solve this problem, but points toward an answer in its chapters on word analysis and words in context.

The exercises in word analysis (mainly Greek and Latin roots and affixes) seem well-adapted to a drill technique based on psychological findings by Professors B. F. Skinner of Harvard and Charles B. Ferster of the Indiana University Medical Center. The pedagogical results of their findings are that continuous and immediate "reinforcement" (i.e., correction of graded exercises) is more efficient than classroom drill or recitation—see Skinner's outline of the theory and practice in *Harvard Educational Review*, XXIV (1954), 86-97. Mathematics and language are two subjects effectively taught by such "reinforcement." The student works exercises in a machine or with a movable mask over the page so that he can check his answer with the correct one as soon as he finishes each item; thus by a series of "reinforcements" he moves confidently ahead at his own pace. Ferster and Stanley M. Sapon report—*Harvard Educational Review*, XXVIII (1958), 58-69—successfully teaching German to a group of volunteers with such exercises. Working on their own, the volunteers learned the equivalent of a semester of German in one-third the time they would have spent in conventional class meetings and outside study.

The exercises on Greek and Latin roots and affixes in CONSIDER YOUR WORDS could be used for such a procedure by writing in answers and making masks. These exercises provide for filling blanks in a sentence so that the student has a context to help him. Sample: "A *psychogenic* disease has its (1) ..... in the (2) ....." (p. 59). These exercises are superior to those in many other vocabulary building texts because they are easy and numerous (377) enough to give the student a chance for success. Professor John R. Warner objects to

drill on such roots and affixes—JOURNAL OF DEVELOPMENTAL READING, II, 2 (1959), 54-57—because they "appear to the students as so many nonsense syllables and frequently have about as much meaning to them as nonce words." Such exercises in this workbook when coupled with the "reinforcement" of immediate answers would constitute drills that might overcome Warner's objections. Certainly he is right that words are best learned in context, but is there to be no foundation of drill to make word study from reading selections more effective?

This workbook has an excellent introduction to "Studying Words in Context." There are seven pages of explanation on how to use the hints given in context to determine a word's meaning and twenty-five sentences and a paragraph as exercises. Unfortunately it is only an introduction; to go on with contextual analysis, the instructor would have to use a novel or an anthology of poetry, short stories, or essays and work up the vocabulary by himself. The main defect of vocabulary building texts is the scantiness or absence of word study in context because most of the authors seem to think linguistic drill more important. This workbook takes a step away from such a deadly classroom procedure, but what is needed is a text with ample drill based on Skinner and Ferster's "reinforcement" principle and a generous (at least half the book) selection of readings for contextual word study. Then the instructor could spend a third or half of the semester running a laboratory in which the students drilled themselves thoroughly on Greek and Latin roots and affixes. When the bright students finished ahead of time, they could be assigned advanced readings and a term paper. The last part of the semester could be spent in recitation on the vocabulary of the readings. Grounding the slow students in one element of word study ought to give the recitation a better chance of being fluent and valuable.

A separate key to CONSIDER YOUR WORDS gives more detailed answers than many another, but still there are gaps. In about half the exercises where a reasonably full entry is essential, the key is laconic. For example, in the first exercise on incorrectly used words (pp. 15-16), the key gives only the scantiest sentence revision that would straighten out the error and fails to answer the questions the authors ask about each incorrectly used word. In the etymological exercise (p. 162), the key only sorts words out and leaves the instructor to guess why one word illustrates pejoration or elevation. Most of the time he knows, but otherwise he has to do the dictionary work that should be in the key. No instructor is so overburdened with time that he enjoys supplementing inadequate keys.

Other worthwhile features of this workbook are chapters on the use of the dictionary, brief history of the development of the English language, two general vocabulary tests, and a brief annotated bibliography of dictionaries and other reference works.

Among these references is the same authors' WEIGH THE WORD, published in 1957. It's an anthology on various aspects of language; in the preface the authors summarize its contents in this manner: "Part I contains articles which deal with the problems of the origin and expansion of language, with particular emphasis paid to the current use and misuse of the English tongue and to the wider problem of language as a force for world unity. Part II includes selections concerned with controlling

and standardizing language. In them are presented 'word men,' the compilers of dictionaries, their works, and the problems of conformity to conventional usage. Part III demonstrates that language, though it is a solemn matter to philologists, has its lighter side. In it serious problems are treated with levity which frequently becomes hilarity, ridicule, or satire" (p. x). Although there are some articles by scholars, such as Otto Jespersen and Margaret Schlauch, the majority of the forty-five selections represent popular reporting of linguistic research or shrewd analyses by laymen. Designed for a general reader interested in language, this anthology is an amiable and good introduction and could be used as a companion text in many kinds of lower division English courses.

John Wm. Harrison

AMERICA READS: 4 volumes with Instructor Guidebooks and Student Test Booklets,, Robert C. Pooley, general editor. Chicago: Scott, Foresman and Company, 1957.

Here is a series of high school texts designed to help the teacher of literature teach reading as well. Included with the four basic literature texts are Student Test Booklets which provide a quick means of assessing each student's reading ability and progress. The Instructor Guidebooks emphasize the need for recognizing individual differences and make suggestions for a program which can be adjusted to individual needs.

Specifically, the Student Test Booklets for the ninth and tenth grades include four Rate-Comprehension Tests, spaced evenly over the semester's work. These consist of timed readings following by comprehension checks which test both memory for detail and overall understanding. At the eleventh and twelfth-grade levels, the Guidebooks provide WPM tables and comprehension tests for selected reading in the basic text. Readings are timed at 30-second intervals, and Reading Efficiency Scores (R x C) are computed. The emphasis is entirely on *comprehended* words per minute.

Flexibility, rather than speed, is stressed in the editors' introductory notes to the Rate-Comprehension checks: "In recent years there has been a tendency to overemphasize speed at the expense of comprehension and to fail to differentiate between the rates of reading suitable for various types of materials." Interestingly enough, the editors, though wide awake to individual differences and the importance of flexibility, have still seen fit to suggest desirable rates for each kind of material read.

The lesson plans in all four Guidebooks contain suggestions for adjusting the program to individual reading needs and levels. In the ninth and tenth-grade Guidebooks, these suggestions are keyed marginally for use with bright, average, and below-average students. Suggestions are made "both for dealing with classes that are predominantly accelerated or retarded and with individuals who are above or below average."

In addition to the materials specifically aimed at improving reading skills, the series includes indexes for audio-visual aids for each unit of work. Films, film strips, and records are listed, but not all have been screened for presentation at the high school level.

The texts themselves, *Good Times through Literature, Exploring Life through Literature, The United States in Literature,* and *England in Literature,* are profusely and attractively illustrated. Each contains an extensive glossary and vocabulary studies stressing context clues, the study of synonyms, antonyms, prefixes and suffixes, word usage, etymology, and basic skills of word perception. The selections themselves were chosen for their "worth to the students" based on classroom experience. Modern writers are well represented. Study questions and skilled-building exercises feature a wide variety of approaches to comprehension and appreciation. What we have here, then, is a series of sound and appealing high school literature texts which were prepared with an eye to the development of *all* the essential reading skills. In the opinion of this reviewer, the program they present is both well-balanced and workable.

Porter Main

News, Letters, and Notes

This first issue of the new volume of the JOURNAL OF DEVELOPMENTAL READING provides an opportunity for comment on plans for the third year of publication. One of our major concerns is to present stimulating articles on research projects of various kinds in the area of reading: manuscripts of this nature are always particularly welcome. Moreover, the editorial staff recognizes the need for dissemination of precise information on individual reading programs whether in secondary schools, colleges, or adult circumstances. The JOURNAL will continue to publish descriptions of reading practices specifically. In early issues expository articles on high school, adult, and college programs will be presented; these articles will be grouped together as was done in Summer, 1959, for "College Reading Programs," or will appear singly. Readers are urged to submit manuscripts which set forth practices, techniques, and devices used in the reading programs with which they are familiar. In addition to the "Bibliography of Studies in Developmental Reading, 1945-57," succeeding numbers of the JOURNAL will offer annual bibliographies of significant publications for each of the three areas of our coverage; these yearly listings will concern publications from 1958 and thus will complement the current twelve-year bibliography.

National Conference at Fort Worth

The ninth annual conference of the National Reading Association will be held on December 3-5, 1959, at Fort Worth, Texas, on the campus of Texas Christian University. Emphasis will be placed on the problems of teaching reading in college and adult situations. As is customary, papers will be presented by experts in these areas; panel presentations and group discussions will bear upon the major features of reading improvement. Particular attention will be paid to recent research developments in planning and sustaining effective reading improvement programs. Full details of the conference may be secured from the Executive Chairman, Oscar S. Causey, Brite Hall, Texas Christian University.

Seventeenth Annual Institute at Temple University

Bruce W. Brigham, Coordinator of Institute Services, The Reading Clinic, Department of Psychology, Temple University, Philadelphia 22, writes that the program is now being formulated for the seventeenth annual institute at Temple to be held during the last week of January, 1960. Activities will include addresses by specialists prominent in various reading areas, panels, demonstrations and case-study presentations for classroom teachers at all levels through college. Special reading teachers, administrators and supervisors, reading consultants, college and adult program personnel, and others interested in reading problems are asked to communicate with Brigham for complete details of this Reading Institute.

Teachers' Word Analysis Skills

A letter from Russell Cosper of the JOURNAL staff offers the following comments:

In "Teachers and Word Analysis Skills" (JDR, II, 4) Delwyn G. Schubert is alarmed that so many elementary and secondary teachers flunked his quiz on "structural and phonetic principles." Well, here is one college teacher who would have flunked too.

The right answer to his first question, "name the vowels," is apparently a, e, i, o, u—a total of five. I would have said eight or nine or ten vowels, depending on how you count. We have at least the different vowels in these words: *bit, bet, bat, balm, bought, boat, but,* and *book.* Then we have the diphthongs in *bait, bite, bough, boy,* and *boat.*

Items 2 through 5 are concerned with long and short vowels. I would have said that the distinction between long and short vowels disappeared some centuries ago. While the /i/ in *bit* is shorter than the /i/ in *bid,* the difference is automatic rather than distinctive. So I would have missed four more questions here.

I am not sure either about number 8. When he says "phonic principles" I assume he refers to orthography. Informed correct responses cited a maxim "when two vowels go walking, the first does the talking." Well, I am not accustomed to thinking of vowels going for walks; but if I had known the maxim, I would have missed again as soon as I had thought of the spelling of *receive* and *relieve.*

Worse than missing most of the test, my methodology was wrong. The implication from the questionnaire is that "there is strong evidence that teachers have not given sufficient attention to those sections of texts used in professional education courses which deal with word analysis." My own approach up to now has been, in matters of phonetic and structural principles, to consult works on structural linguistics, phonetics, and grammar.

The situation is more dismal than Mr. Schubert indicates. Probably college teachers wouldn't show up very well either on the quiz.

Yours,
Russell Cosper

Recent Publications and Devices

Two articles of special interest to teachers of reading have come to our attention recently:

Cecil J. Mullins and G. P. Eldridge describe "A Short Reading Improvement Course for Executives" in the September, 1959 *Personnel Journal,* XXXVIII, 140-42. Remarkably aware of the problems peculiar to reading courses for business and industrial groups as compared with reading classes in the academic environment, Mullins and Eldridge present their solution, with interesting statistical evidence on "beginning average" and "best average" results of a course given in San Antonio, Texas.

NEWS, LETTERS, AND NOTES

An extensive discussion of "Promoting Growth in Critical Reading" is given by Frances Oralind Triggs in *The Reading Teacher,* XII (February, 1959), 158-64; this article is also reprinted in abbreviated form in *The Education Digest* XXV (September, 1959), 42-44. Few reading specialists will quarrel with the conclusion that "critical reading should be taught at every developmental level."

To provide a series of films slow enough to accommodate readers who have difficulty with the speed of the first film in the Developmental Reading films series, C-B Educational Films, Inc., of 690 Market Street, San Francisco 4, is now producing three practice films, each approximately six minutes in length with a beginning rate of 100 wpm, progressing to 160 wpm. Content, vocabulary, and reading level are also less difficult in the Beginning Phrase Reading set than in the regular C-B series. For these films as well as for those in the original series, comprehension tests and teachers' guides are available.

Development of Reading Rate and Comprehension

Most studies of reading have dealt with one or the other of two factors involved: (a) speed and (b) comprehension. The psychological act of obtaining meaning from the printed page is very involved, as is any process of symbolic interpretation. It is here contended that either of the two factors cited is in itself inadequate and that they must be combined to give a meaningful index of accomplishment. Such a concept is described as the reading efficiency index and is obtained by multiplying the rate in words per minute by the comprehension calculated in per cent. It compares favorably with commercial practices of assaying samples of ore, grain, foodstuffs, or other materials to determine the net value of a lot or consignment. In reading, one whose speed is 450 words a minute may have ninety-five per cent comprehension or he may have ten per cent comprehension. While comprehension and speed are somewhat positively correlated, it is by no means a perfect relationship.

Studies carried on at Iowa State College lead us to suggest that each individual has an optimal rate of reading, within any given period of time, at which he will obtain the most for his time and effort. The concept proposed is found useful in helping determine the approximate limits and scope of the optimum rate.

Method and Procedure

The results were obtained from the regular reading classes at Iowa State College which were carried on for students needing or desiring reading improvement, during two one-hour periods a week for half a quarter. This usually allows about ten practice periods besides the initial and closing test periods. The classes ranged in numbers from ten to thirty-five although it seems desirable to keep the number down to fifteen or twenty whenever possible.

At the first period the enrollment was completed; a short form of the Iowa Silent Reading Test was shown; and the purposes and uses made of it in the course were explained. Each successive period during the training was divided into three parts: (a) a fifteen-minute discussion of

specific suggestions for improving reading was made by the instructor; (b) one of the Harvard Reading Films was then shown and an objective test on it given immediately afterward; and (c) a mimeographed exercise of similar nature was used followed by a similar objective test on the content. The tests were all scored in class but rechecked and recorded in the office.

The films were run at speeds suitable to the group, usually starting at 175 words a minute and gradually increased to 350 words a minute. The rate is usually too slow for some at the beginning and too fast for others at the end. However, it is thought that pacing the speed of the readers will be more likely to improve reading than letting them dawdle along.

Throughout the training period the practice aspect was emphasized with only a minimum of time given to the discussion of reading improvement. Each student kept a log of his progress, started a vocabulary list in the subject most troublesome to read in his college work, and also reported the applications made at home to his regular reading-study program. These accounts were turned in to the instructor for grading. Speed alone was not emphasized; but the reading efficiency index was stressed. The student was asked to determine the rate at which he read most efficiently, then gradually to push his speed up in order to get the best possible results from his reading time. A goal of two hundred words a minute was attained by most of those who took the work seriously.

Results

Although studies of reading have been carried on at Iowa State College for several years as reported by Lauer (1) and Henry and Lauer (2), the present report describes the techniques used since the Harvard Reading Films have been combined with printed material in regular classes for reading improvement. Two typical experiments with these studies will be described under the respective headings.

Experiment 1

Sixty-four students taking the course in remedial reading were studied. Two criteria of evaluation were used: (a) comparison of results from the first half and the last half on printed exercises, and (b) comparison of the results obtained on the Pressey Reading Speed and Comprehension Tests, Forms A and B, given at the beginning and at the end of the training period, respectively.

By using the method of evaluating group differences described by Snedecor (3) the following results were obtained:

Table I

Printed Exercises--First and Last Half of Training Period

Variable	*Beginning*	*Ending*	*Gain*	*t-value*
Speed alone	208.15	211.50	3.35	.40
Comprehension %	49.87	65.43	15.56	7.85
Reading Efficiency	100.43	134.29	32.65	5.86

Table II

Variable	*Beginning*	*Ending*	*Gain*	*t-value*
Speed alone	190.03	246.25	56.22	4.75
Comprehension	24.96	25.59	.63	1.13

In general the results show improvement in exercise material of comprehension to be statistically highly significant, whereas improvement on

the Pressey Test shows that speed of reading is more likely to be improved. An inherent weakness in the Pressey measure of comprehension seems evident, however. As a 3-answer multiple-choice type of test, it probably is too easy since the lowest decile on the norms answered 22 out of 30 items correctly. The highest decile obtained 29 out of 30 items and thus, with a distribution skewed to the upper end, one might expect greater chance variations of scores. To equate these two problems, a second experiment was conducted to evaluate the data shown in tables I and II.

Experiment II

A class of twenty-nine was used for evaluation of improvement on the basis of the efficiency index using the Pressey Speed and Comprehension Test. The comprehension score was converted into a percentage comprehension rather than the number right. Otherwise the study was designed in the same fashion as described for Experiment I.

Since there was a correlation of +.55 between the first and last efficiency scores, it was thought advisable to use the formula for group differences ordinarily applied to similar data. This formula is well-known, being written:

$$\text{S.D. diff.} = \sqrt{\text{S.D.}^2_{m_1} + \text{S.D.}^2_{m_2} - 2 \times r \, \text{S.D.}_{m_1} + \text{S.D.}_{m_2}}$$

The results are shown in table III.

Table III

Improvement in Efficiency as Measured by the Pressey Test

Variable	*Before*	*After*	*Gain in per cent*	*Critical ratio*
Efficiency Index	157	202	22.3	5.00

Summary and Conclusions

A study of two experimental groups of students in reading improvement classes of sixty-four and twenty-nine respectively showed evidence of improvement in all cases. It seems that improvement is obtained in the area emphasized, whether speed or comprehension. Some measuring instruments commonly used are held to be inadequate for showing actual results obtained. The following tentative conclusions may be drawn, subject to the limitations of the study:

1. It is necessary to equate speed and comprehension when making evaluations of reading improvement to obtain consistent results.

2. The efficiency index (speed times per cent of comprehension) is a usable concept and should be employed in any evaluation of reading improvement. It tends to smooth out inconsistencies which may be introduced by systematic errors of one type or another, when either speed or comprehension is used separately.

3. A highly reliable difference was obtained in every group given remedial treatment where this index of improvement was used.

4. Improvements of from 30 to 35 per cent may be expected in five weeks of class work in remedial reading as described in this study. In

general the better readers improve more than the poorer readers when absolute increases are considered. Individual cases of improvement may run as high as 250 per cent or more.

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Using Current Events

During the summer of 1958 this writer heard Miss Josephine Wolfe outline her plan for the teaching of reading and spelling.[1] He at once recognized in the presentation and effective device for helping a group of eighth-grade students he was to have that fall, poorly equipped in English but chronologically advanced to the point where it would have been folly to detain them. Miss Wolfe's plan was to select practical words from regular reading lessons as a basis for work in spelling. The customary list of unrelated spelling words was thereby eliminated.

The reading ability of the group that met in the fall ranged from 4.2 to 6.7 and the chronological ages ran from 13.4 to 16.4. The intelligence of the group was average in some cases and slightly below in others. Reading had never appealed to them, so this skill had never had the opportunity to develop. How this affected other areas of school work is an old story. But now, as high school work suddenly confronted these students, they became aware of their limitations. Now they wished they could read. But to take these people now and plunge them into the cold sea of formal Freshman English would have stifled the inclination to read. Some common denominator of reading appeal for the entire group had to be found, and that denominator was CURRENT EVENTS, because it dealt with the everyday world. CURRENT EVENTS became the basic reading text. From it the spelling words were gleaned. Here is the story of how it was used, and an appraisal of its success:

Monday:

Pass out copies of the paper. Have class go over the stories in a newsy sort of way, discussing a word here and an item there. Get responses of general knowledge suggested by the items. After fifteen minutes have the class-members decide which of the articles they would like to concentrate on for detailed study. On the basis of that selection, give the assignment for Tuesday. (In this particular issue the class selected a write-up on J. Edgar Hoover and the work of the Federal Bureau of Investigation.)

Assignment for Tuesday: (Copied in its entirety by the students as a writing exercise)

1. Read the complete article on J. Edgar Hoover thoroughly, with two objectives in mind: (a) Understand it well, for class discussion. (b) Practice reading it fluently, aloud and silently.
2. Mr. Hoover is asked five questions on juvenile delinquency. Restate his answers in your own words, written out.
3. Underline all words in the article with which you are not thoroughly familiar.
4. Be ready to discuss in class:
   a. How would you have answered the questions?
   b. What did your parents think of the questions?
   c. Just what is Mr. Hoover's title?
   d. What can you tell us about another Mr. Hoover?

Note: What academic challenges or learning opportunities are present in this one day's assignment?

1. The opportunity to have a well-prepared paper, and the pride that goes with such an accomplishment.
2. A preliminary acquaintance with about twenty new words, which they will spell and master later.
3. An abundance of reading drill.
4. Some familiarity with two prominent Americans.
5. A wholesome informal discussion.
6. An alertness to a vital American problem.
7. An opportunity for self-expression.
8. The right to a personal opinion on a public question.

Assignment for Wednesday:

1. List in alphabetical order, the twenty (or more) words chosen from those underlined.
2. Use each of these words in a sentence.
3. Special recognition will be given for using two or more of the words in one sentence.
4. Which of these words can be used in several meanings?

Note: What are the learning opportunities for Wednesday?

1. Again, a neat paper.
2. A good addition to the vocabulary.
3. Proper prounciation, spelling.
4. Alphabet practice.

Assignment for Thursday:

1. Discussion of sentences constructed from word list.
2. Trial spelling lesson.
3. During class—condensing the entire article into six or eight sentences. (As each sentence is constructed the teacher writes it on the board. This is continued until the article is completely rewritten. All students copy it in pencil.)
4. Prepare a list for class discussion of the subject of each sentence.

Note: What are the learning opportunities for Thursday?

1. List of subjects is always written—it is another spelling and writing drill as opposed to the common assignment of "draw a circle around each subject."

2. Pride in contributing to the construction of the revised sentences.
3. An opportunity for the less articulate to contribute.

Assignment for Friday:

1. Final spelling lesson.
2. Hand in the revised copy.
3. Reading of the revised copy by one or two who would have had difficulty in reading the original.
4. Each member be prepared to discuss very briefly some subject that was suggested by this article.
   (Contributions were City Gangs, Teen Age Smoking and Drinking, Truancy, Hobbies, Delinquent Parents, etc.)

Now, in summary, what did the week accomplish?

1. Students read an article completely through.
2. They can spell and use every word in it.
3. They have handed in several neatly written papers.
4. They have discussed a vital subject, at school and at home.
5. They have developed some reading fluency.
6. They have painlessly done a little work in grammar.
7. They developed an interest in reading and a desire to do it all over again.

And so they did. Not every week, but very often the same pattern was followed. Occasionally a week was devoted to grammar. Toward the end of the year there was a marked improvement in every phase touched upon. During the closing weeks, the group read "The Ancient Mariner." An achievement test recorded an average gain of two years for each student. Not one of them dropped out of school.

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[1] This procedure is the application of suggestions made by Miss Josephine Wolfe as a consultant at the Marquette University Reading Clinic of 1958.

Retarded College Readers View Their Problems

How does the inefficient college reader look at his problems? Will his attitude change after participation in a developmental reading program? This was the type of question that interested two instructors in the reading clinic at San Jose State College. In order to discover information that would enable them to give better help to future reading students, these instructors developed an inventory which offered students an opportunity to check their problems as they saw them. Another questionnaire designed to measure the effectiveness of instructional techniques and changes in attitude and skills was administered at the conclusion of the semester course.

The instructors were interested in the type of difficulty which students with reading problems felt were most important from the student's point of view. They wondered whether improvement in reading skills would change this emphasis and whether classroom achievement in general

would improve. And, of course, they wondered whether the students had valid suggestions for improving the reading clinic method.

At San Jose State College students who plan to be public school teachers and whose reading ability falls below a raw score of fifty on the Cooperative English Test are required to register for Reading Fundamentals, a class which meets twice weekly with one class period devoted to lecture-discussion and the second to laboratory experience. The group observed during the fall semester of the 1958-59 school term included eighty-five students; of this group 75% were freshmen and the balance sophomores, juniors, seniors, and several graduate students. Approximately one-fifth were men.

The inventory, which was given at the beginning of the semester, allowed students to check items which indicated student attitudes toward reading, personal adjustment, reading skills, and study habits. This checklist was used by the instructors to aid in the evaluation of specific individual problems. In the follow-up conferences that were held students appeared to have an increased awareness of their problems. Individual discussion seemed to clarify student feeling and thinking about those problems. As a result, students were asked to establish near-term goals in various reading skills in which they thought themselves handicapped.

The questionnaire administered at the end of the semester called for students to evaluate in their own words the class experience in terms of their improvement, or lack of improvement; felt changes in their emotional tensions centered about reading; evidence of improvement in other college courses which they thought was partially due to the course; the type of instruction which helped them most; and, finally, their suggestions for improvement of the course.

Items checked on the first inventory were validated in the individual conferences. In other words, the students still felt that the same problems bothered them when these problems were discussed with them individually.

The most frequently checked items regarding reading skills were these:

I don't seem to remember what I read;
I don't know where to start to improve my reading;
I have trouble understanding what I read;
I read one word at a time;
I read so slowly I can't finish my assignments;
I read everything at the same rate.

At least half the students checked the following emotional-personal adjustment problems:

I frequently have to re-read because I have trouble concentrating;
My mind wanders when I read;
I'm easily distracted by noises or talking when I read.

The inventory also indicaetd that over three-fifths of the students did not bother to look over the chapter before beginning textbook reading and that one-third admitted infrequent use of the dictionary, procrastination, and little attention to charts, graphs, tables, indexes, tables of contents, chapter titles, or paragraph headings.

Results of the questionnaire given at the end of the semester revealed that initial reading problems had been viewed as equally distributed in the areas of rate and comprehension. Further, it indicated that only one-third of the students admitted being fully aware of their problems at the outset.

Also, students were convinced of their improvement in both rate and comprehension. Three-fifths were aware of increased comprehension, while four-fifths noted improved ability in rate of reading. The instructors were pleased that nearly all students had been able to transfer reading skills to college academic studies and that over two-thirds had substantially reduced their worry about the severity of perceived reading problems.

Students in the course believed all the reading devices to be helpful and mentioned specifically the SRA Reading Kit, Controlled Reader, Tachistoscope, Reading Rate Accelerator, Rateometer, and various workbook materials. There was general approval of individual conferences, which students said improved their self-confidence and understanding.

The instructors believe they were rewarded for the time given to the inquiry about their students' reading problems. The increased awareness of students regarding their individual problems and the subsequent conferences designed to encourage student self-confidence would seem to justify the time spent.

Charles C. Coffey
Margaret Ann Blair
San Jose State College
San Jose, California

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Developmental Reading: A Selective and Critical Bibliography

Part IV

1. Helen S. Grayum, "Skimming in Reading: a Fine Art for Modern Needs," *Bulletin of the National Association of Secondary School Principals,* XXXIX (September, 1955), 26-34.

   Brief discussion of the problems which arise because students are traditionally reminded to "read carefully." Description of a research project designed to study the techniques of superior skimmers among 4th, 7th, and 10th grade pupils, college students, graduate students, and widely read adults. Eye-movements were photographed. Rate, attitude, and comprehension were studied. The techniques of superior skimmers were characterized by (1) flexibility of rate, and (2) individuality.

2. Robert M. Griffin and Kenneth S. Imel, "A Reading Improvement Program for Adults," *California Journal of Secondary Education,* XXX (October, 1955), 372-75.

   Brief description of a successful machine-centered adult reading program. Includes a list of the equipment and printed materials used and a few capsule case histories.

3. Virgil E. Herrick, "Criteria for Appraising Procedures Used to Promote Reading Development," *Elementary School Journal,* XLVI (December, 1945 and January, 1946), 191-99, 258-65.

   This article, in two parts, defines *development* in reading as indicating "progress toward a defined maturity." The author outlines four major criteria to be used in appraising instructional procedures aimed at reading development in "the common school." In brief, these are: (1) *Defined Goals*—"Do you have clearly defined goals which indicate the scope and direction of the reading program and which will form the basis for any appraisal of instructional practices and materials?" (2) *Continuity*—"Do your instructional procedures and materials contribute to the essential continuity of the child's present and future reading development?" (3) *Interrelationship*—"Do your instructional procedures and materials recognize and utilize the interrelationships which exist between reading and other functions of language and between language and other developmental areas?" (4) *Two-Dimensional Evaluation*—"Do you evaluate the adequacy of instructional procedures and materials of a child's reading development on the basis of the two dimensions of reading goals and developmental patterns?"

4. Henry T. Hogg and Arno Jewett, "What Should We Do about Reading in the Junior High School?" *Bulletin of the National Association of Secondary School Principals,* XLI (April, 1957), 73-6.

   Summary of presentations made at 41st Annual Convention. Hogg: Emphasizes the necessity for junior high-school principals to sell faculty, student body, and community on a total reading program. Points out that the principals should themselves recognize that learning to read is a continuous process. Gives brief description of reading program in El Dorado, Arkansas schools.

Jewett: Suggests approaches for in-service training programs in reading. Lists eleven reading skills which should be taught by all subject-matter teachers and stresses the point that the principal is the key person in every reading program.

5. Otto F. Huettner and John J. Hosmanek, "A Reading Program for the Superior Student," *Bulletin of the National Association of Secondary School Principals,* XLI (March, 1957), 65-8.

   The "good" student is not necessarily a good reader. Many secondary school students who are potential college material need training in essential reading skills. The authors suggest an elective class in reading, at any grade from seven to twelve, which will teach skills of comprehension, appreciation, evaluation, and speed. In their suggested outline for such a class at the 9th grade level, they list thirteen units of study, including such items as: Reading for a Purpose, Increasing Reading Speed, Appreciation of Creative Writing, Doing Study Type Reading.

6. J. T. Hunt, "What High School Teachers Should Know about Individual Differences in Reading," *School Review,* LX (October, 1952), 417-23.

   The range of reading ability and background within a classroom constantly widens from the first day of the first grade. The author discusses five major causes of widespread reading differences: (1) mental age, (2) total growth pattern, (3) variations in aptitudes for reading different types of materials, (4) school promotional policies, (5) teaching efficiency. Good teaching tends to increase differences. It is important for teachers to know their students and to accept the facts about them. The author suggests seven specific reading skills which need to be taught and gives brief suggestions for a high school reading program, including the reading responsibilities of content teachers.

7. Roy O. Isacksen and Fred P. Roessel, "Differences in Reading Ability," *Clearing House,* XXXI (February, 1957), 342-5.

   "Does the school program thwart the individual of low ability?" The authors says yes. "Tom is fourteen years old. The girl across the aisle is reading *A Tale of Two Cities.* He can't read the fourth-grade reader on the desk before him." By way of suggesting remedies, Isacksen and Roessel discuss such topics as *Success is Important, Text at their Level,* and *Repeating doesn't Improve.* They point out the necessity for a realistic acceptance of intellectual, emotional, psychological, and socio-economic differences, and for a grading system which reflects this acceptance.

8. Grant W. Jensen and Wilson M. Stone, "For Those Who Would Read," *California Journal of Secondary Education,* XXX (October, 1955), 376-8.

   Report on the hiring of a full-time reading director by a California high school. One-half time was devoted to a developmental program; the rest, to remedial work and to assisting the faculty in building a school-wide reading program. A systematic attempt was made to enroll the cooperation of teachers, pupils, P.T.A., community, and the school officials. As a result, a County High School District reading

program was instituted. "Our next task is to convince parents that children must read in order to learn to be good readers and thus fight the challenge of television."

9. Granville B. Johnson, Jr., "A Comparison of Two Techniques for the Improvement of Reading Skills at the College Level," *Journal of Educational Research,* XLVI (November, 1952), 193-205.

   Compares (a) drill on reading skills, and (b) the psychology of learning with particular application to study skills.

   Subjects: college freshmen who were poor readers. "The first method taught reading skills directly, while the second utilized group psychotherapy and touched on reading only with reference to the psychology of learning.

   "Though both methods emphasized improved reading ability to approximately the same extent, the course in group psychotherapy also appeared to exert some influence on the performance in the 'Quantitative' area of the *American Council on Education Psychological Examination,* and in some factors of the 'Self' and 'Social' adjustment factors as measured by the *California Test of Personality.*

10. Loaz W. Johnson, "Improving Reading in Butte County High Schools," *Clearing House,* XXXII (December, 1957), 207-11.

    Describes the problems of a county where no high school had a specialist in reading or a teacher specially concerned with reading improvement except in the area of remedial reading. Reports on a one-year experiment with a "packaged," (SRA) program administered by English teachers along with regular class work. Some teachers did not give full cooperation, but the program tended to indicate that considerable gains in both rate and comprehension can be made with "a minimum of time and effort" where enthusiastic teacher cooperation can be enlisted.

11. Marjorie S. Johnson, "A Study of Diagnostic and Remedial Procedures in a Reading Clinic Laboratory School," *Journal of Educational Psychology,* XLVIII (April, 1955), 565-78.

    An intensive analysis of the thirty-four remedial reading cases, average age, eleven years, four months. Summarizes characteristics and gives per centages as to the influences of chronological age, sex, capacity, vision, hearing, visual and auditory perception, laterality, social and emotional adjustment, reversal tendencies, school progress and achievement. Assesses the relationships of findings and makes detailed recommendations for more effective analysis and treatment of remedial cases.

12. Arthur D. Kallen and Gene Kyser, "The Organization and Evaluation of a Reading-Improvement Program," *Personnel,* XXXIII (September, 1956), 141-9.

    Navy Department reading program described. Program included many scientific workers who, because of their large volume of technical reading matter, were "especially notable examples of the fact that many adults read well below their capacity." Aims of program: to teach fundamental reading skills, improve eye movements, develop a thinking and questioning attitude toward reading, and promote flexibility in speed and attitude. Methods: Groups sessions for dis-

cussion of reading principles and techniques, laboratory sessions for individual work. Materials: films, workbooks, tachistoscope, and rate controllers. Evaluation: after one year, the reading efficiency of employees had increased 70% in comprehended words per minute.

13. Robert Karlin, "Machines and Reading: a Review of Research," *Clearing House,* XXXII (February, 1958), 349-52.

Summarizes conclusions of recent studies of machine-centered programs vs. "natural reading" training. Warily concludes that, although all the facts are not in, "it is reasonable to suggest from what information is presently available that perhaps the monies which have been spent for the purchase of reading machines be used for other purposes."

14. Ernest W. Kinne, "Reading Improvement for Adults," *College English,* XV (January, 1954), 222-28.

Describes Purdue experiments in developmental reading for adults, 1951-53. The results of three programs—faculty and graduate students at Purdue, adults at the Indianapolis Extension Center, industrial executives in an in-plant program—were compared with undergraduate records. Samplings were not extensive enough to be conclusive, but they indicated that (1) older adults generally "responded somewhat more slowly in gains in speed but had a slight advantage in comprehension," and (2) "adults compare very favorably with the average performances of younger students."

The article also describes an enlarged course for graduate students combining training in basic reading skills with a seminar "somewhat like the Great Books courses." Students in this course maintained the same relative gains in reading skills as others in a regular developmental reading course.

15. Lou L. Labrant, "Reading Problems Growing out of Differences in the Language Used in Various Curriculum Areas," *Education Digest,* XVIII (March, 1953), 17-18.

Condensation of article from *Improving Reading in All Curriculum Areas,* University of Chicago Supplementary Educational Monograph #76 (November, 1952). The problem is summarized in a quotation from a high school teacher: "I don't teach reading; I have only literature." By way of reply, the author points out that reading is not a generalized skill. She also complains of the textbook writers—of their "cuteness," their oversimplifications, their word tests. She asks (1) that all teachers teach reading, and (2) that they choose genuinely readable, interesting, well-organized textbooks.

16. Frank Laycock, "Significant Characteristics of College Students with Varying Flexibility in Reading Rate: Eye Movement in Reading Prose," *Journal of Experimental Education,* XXIII (June, 1955), 311-19.

Report of an experiment on proficiency in changing, consciously, from a "normal" to an "advanced" rate of reading. The experiment, conducted among college students of similar abilities, initially segregated two groups or types—those who were "flexible" and those who were "inflexible," both while retaining good comprehension. In comparing the eye-movements of both groups, the author reached several

interesting conclusions—among them: "The more flexible group was significantly superior in most eye-movement measures." "Less flexible readers commonly report that they cannot successfully think of increasing visual span, for example, while still maintaining adequate comprehension." ". . . the most significant differences found between the more and less flexible readers were rate and fixation span . . ." "Since comprehension for each group was adequate, one implication is that ease in controlling eye-movements is a factor in achieving flexibility."

17. Frank Laycock, "Motor and Perceptual Skill in 'Reading' Material Whose Meaning is Unimportant," *Journal of Experimental Education*, XXIII (June, 1955), 320-30.

    An experiment designed to follow up the study reported above. Laycock experimented with the same groups of "flexible" and "inflexible" readers in "quasi-reading" situations which minimized the importance of content. His purpose was to test the efficiency of eye-movement. His findings indicated that students who increase speed easily seem to have eye-movements and perceptual habits which aid them. His conclusion: "Training programs should be able to aid less flexible readers by paying special attention to these motor and perceptual habits."

18. Norman Lewis, "An Investigation into Comparable Results Obtained from Two Methods of Increasing Reading Speed Among Adults," "Adults," *College English*, XI (December, 1949), 152-56.

    Lewis compares two methods of adult reading training, one stressing eye-movement, the other stressing comprehension. In a limited experiment conducted at the Adult Reading Clinic of the City College of New York, the comprehension program produced an average increase in speed of 69.1% as compared with 24.7% for the eye-movement method. The eye-movement program made use of flashmeter, metronoscope, mimeographed exercises, and timed tests, but required no outside work. The comprehension-oriented program used no mechanical devices, featured timed readings followed by analysis and discussion, and required the timed reading of one novel a week outside of class.

19. Robert F. Lockman, "A Note on Measuring Understandability," *Journal of Applied Psychology*, XL (June, 1956), 195-96.

    Lockman tackles the problem of readibility measures and their common failure to assess understandability. In an attempt to assess the difference between "readabality" and "understandability," he devised an experimental rating scale with seven catagories comparable to Flesch's standard style descriptions, ranging from "very easy" to "very difficult." 129 to 273 Naval Aviation Cadets were asked to rate nine sets of directions on standard psychological tests. The results were correlated with Flesch's Reading Ease scores. Lockman's conclusion: the understandability ratings and the RE scores were not measuring the same thing.

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